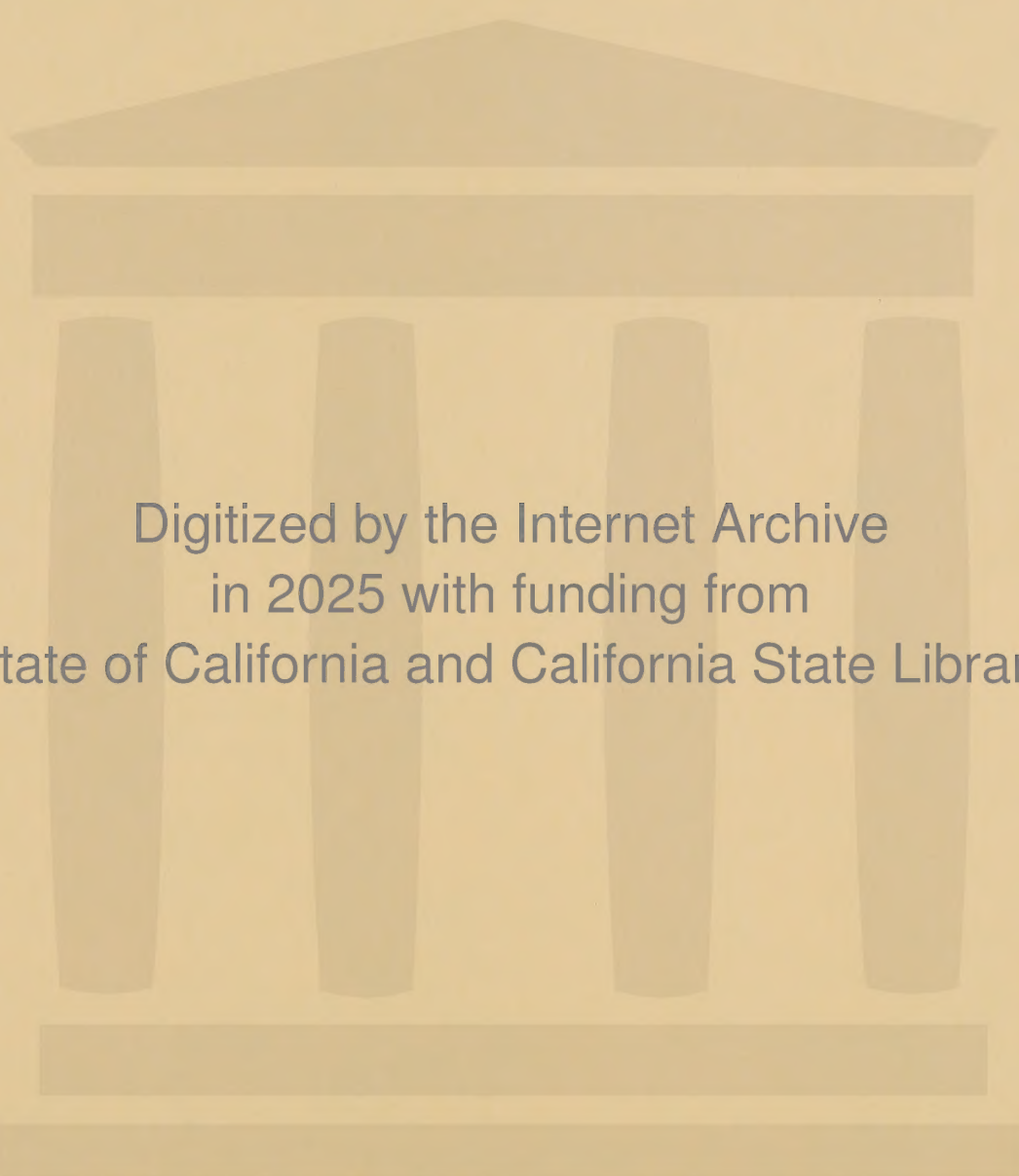


EXISTING CONDITIONS REPORT

ESCONDIDO GENERAL PLAN PROGRAM

1887



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CITY OF ESCONDIDO, CALIFORNIA:

GENERAL PLAN REVISION PROGRAM

Existing Conditions Report

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I. INTRODUCTION

This report is the first in a series of documents to be prepared as part of the Escondido General Plan Revision Program. It will serve three key functions in terms of the overall planning process. First, it will present a thorough documentation of the existing situation in Escondido. This information will form the baseline against which all future changes can be compared. Second, the report will inform the discussion of particular issues that may be addressed in the general plan. For example, it will indicate approximately how much of the City's developable land is on hillsides with slopes of over 30 degrees, thus enabling policy makers to decide what uses should be on hillsides vis a vis flat lands as well as what densities might be appropriate for each. And, third, this documentation of existing conditions will eventually be incorporated into the Environmental Impact Report (EIR) that will be completed in conjunction with development of the general plan itself as required by the California Environmental Quality Act.

Although this report is being presented to the community in final form, it is essentially a "first cut" at defining the important planning issues and discussing the relevant information. Community members, City staff, and other interested parties are expected to respond to this document as a way to offer further input on the ultimate scope and focus of both the general plan and the EIR. There are 10 major planning issue areas presented in the report that were selected based on five sources of input: a series of five community workshops; several meetings with a Citizen's Task Force which has been appointed by the City Council; input from City staff and other technical experts; the consultant team's own evaluation of circumstances in Escondido; and state planning law requirements for the contents of a general plan (California Government Code Sections 65300, et seq.).

The 10 planning issue areas addressed in this report are as follows:

- Population and housing, which considers Escondido's existing and projected demographic profile and discusses the existing housing supply as well as the increased housing need that will be associated with projected population growth.
- Land use, which considers the types of land use activities that currently exist in Escondido and their location as well as the existing functional relationships between different areas within the City. Land which is available to accommodate future growth has also been identified.
- Community facilities, which considers public services currently offered to City residents. The existing capacity of the physical facilities is documented, capacity problems are discussed, and any planned improvements are described.
- Natural resources, which considers the presence and significance of various natural features including wildlife habitat and vegetation; watershed areas and stream channels; major land forms, and geologic conditions.
- Cultural Resources, which considers archeological sites and historically significant assets.

- Natural and man-made hazards, which considers any hazard that might be a constraint to future development including poor soils, fire hazards, and toxic waste sites.
- Air quality, which considers existing air quality conditions in Escondido.
- Noise, which considers the current noise sources, identifies noise sensitive locations, and discusses existing noise problems.
- Infrastructure, which considers existing capacity, capacity constraints, and planned improvements for sewer, water, wastewater, sanitary landfill, and power supply.
- Transportation, which considers conditions of the existing road network, bicycle and pedestrian circulation including hiking trails, and public transit.

The geographic focus of the existing conditions report is the City's Planning Area. The Planning Area extends beyond both the City's current boundary and its sphere of influence to include any territory "which in the planning agency's judgement bears relation to its planning" (California Government Code Section 65300). Escondido's planning area was established at the time the City's first general plan was completed, and it is still considered valid. While the City's sphere of influence demarcates what is expected to be the City's ultimate boundaries, the planning area boundary indicates the broad relationship between the City and its surroundings. Although the land between the City's sphere of influence and its planning area boundary is not now, nor is it expected to be, within Escondido's jurisdiction, the general plan's land use designations will indicate the community's priorities and concerns for these areas to adjacent jurisdictions. This effort is expected to lead to better coordinated planning efforts between adjacent jurisdictions as well as lending a more regional perspective to the local planning process. Escondido's current city boundary, its sphere of influence, and the planning area boundary are all shown on Figure I-1.

Escondido is currently facing a number of difficult decisions regarding its future. Historically the City has served as commercial center surrounded by agricultural uses. This feature combined with its natural topography have given Escondido a very strong identity as an intimate rural community that is physically set apart from the rest of San Diego county. However, Escondido's population has almost doubled in size since 1970, and is expected to increase by an additional 18,400 people by the year 2000. While this growth can be a tremendous asset for Escondido in that it can help the community afford first class urban services, it can also undermine the best features of its historic small town character. This general plan revision program offers Escondido residents the opportunity to evaluate the current conditions of their city, to look at projected conditions for the future, and to make proactive planning decisions which will allow them to manage growth in a meaningful way without having to sacrifice their current quality of life.

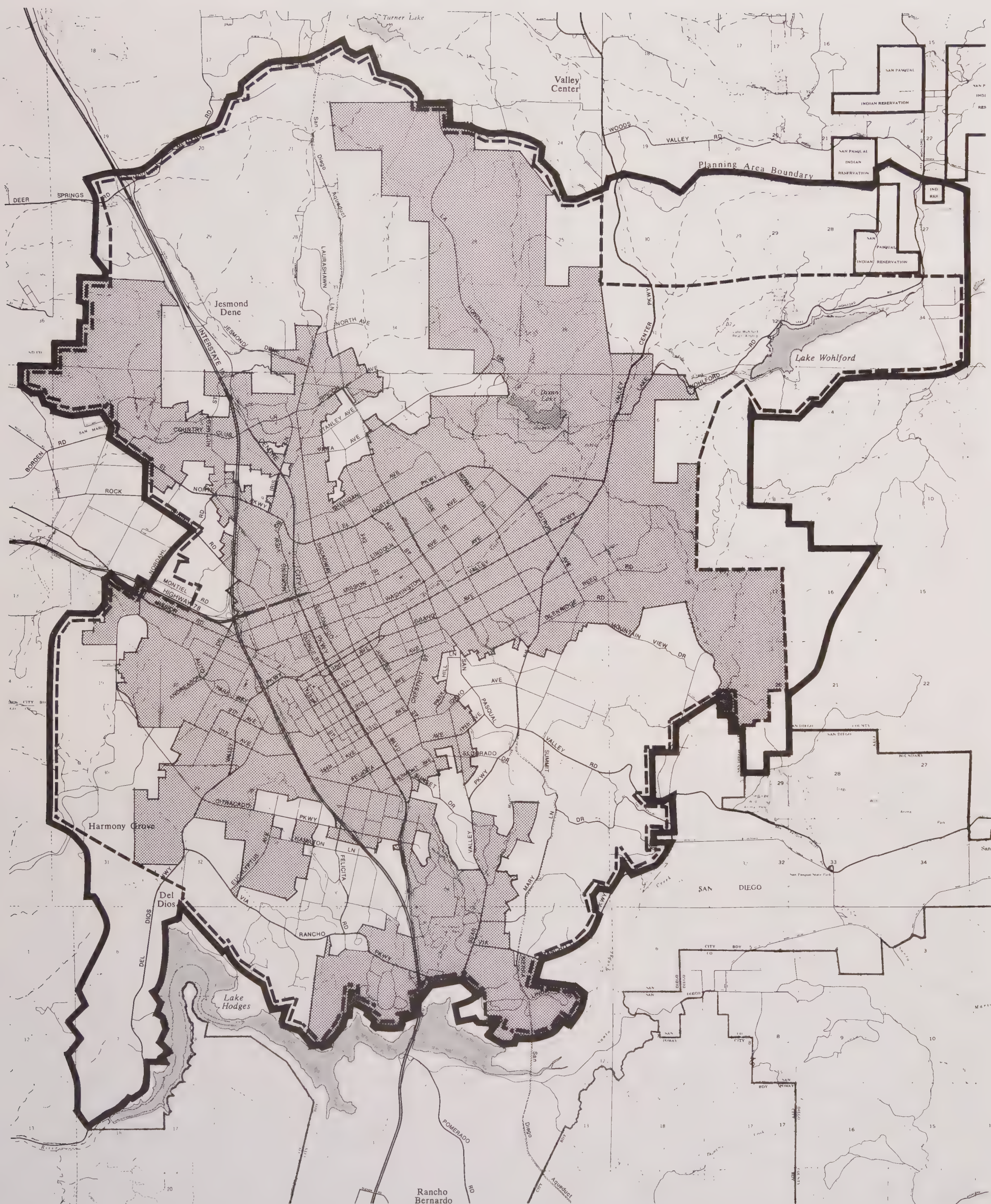


Figure I-1 PLANNING BOUNDARIES

- Planning Area Boundary
- Sphere of Influence
- City of Escondido Limits

II. POPULATION AND HOUSING

A. POPULATION

1. Population Overview

Escondido experienced slow but steady population growth from the time of its incorporation in the late 1800s until the early 1950s. After 1950, the City began a long-term period of explosive growth with its population growing by over one hundred fifty percent from 1950 to 1960. This rapid increase in the growth can be attributed to numerous factors including extensive annexations, construction of several major highways, and Escondido's transformation from a commercial center primarily serving the surrounding farmers to the commercial and financial hub of northern San Diego county. In 1980, there were about 64,360 people living within Escondido's incorporated boundaries. By 1986, the State Department of Finance estimated that an additional 15,000 people had moved to the City, representing a twenty-four percent increase.

As Table II-1 shows, during the period from 1970 to 1980, Escondido's population grew more quickly than did either the county or the state. In 1984, the San Diego Association of Governments (SANDAG) completed a series of population projections for both San Diego county and each city within the county through 2000. At that time, SANDAG anticipated that Escondido's General Plan area would continue to gain population more quickly than the county or the region but the City itself would experience a declining growth rate. SANDAG is currently updating its population forecasts. However, the results of this effort will not be available until next fall. In the interim, it is reasonable to assume that while the absolute numbers may shift somewhat, the General Plan area will continue to grow more quickly than the City itself. The explanation for this is simple in that the area within the existing city boundary is almost entirely developed while Escondido's Planning Area includes thousands of acres of undeveloped land that could easily accommodate large numbers of new residents. Further discussion of the available land supply within the General Plan area can be found in Chapter III of this report.

2. Demographic Characteristics of the Population

Age Structure. The age structure of the population has important planning implications in terms of the provision of community services and appropriate housing opportunities. Table II-2 shows the age distribution of Escondido's population in 1980. About 25 percent of the City's residents were below the age of 18, while people over the age of 65 accounted for about 16 percent of the total population. The county's population had a similar proportion of people under the age of 18 in 1980. However, people over 65 years of age comprised only 10 percent of the total population. This indicates Escondido does not have a disproportionate number of young people but that it is an attractive location for senior citizens.

Race - Ethnicity. Escondido's population is relatively homogenous with over 80 percent of the residents in 1980 being classified as White as shown in Table II-3. The county as a whole was only about 74 percent White. The only other significant ethnic

Table II-1: Population Growth: 1970-2000

	<u>1970</u>	<u>1980</u>	<u>2000</u>	<u>% Change 1970-1980</u>	<u>% Change 1980-2000</u>
Escondido (City)	36,792 ¹	64,355 ¹	82,800 ¹	75	29
Escondido (General Plan area)	—	83,410 ¹	143,632 ¹	—	72
San Diego County	1,351,891 ²	1,861,800 ¹	2,699,200 ¹	37	45
California	19,663,000 ³	23,500,000 ³	32,853,000 ⁴	19	40

Sources: ¹ SANDAG Series 6 Regional Growth Forecasts

² U.S. Census 1970

³ California Statistical Abstract

⁴ California Department of Finance

* * * * *

Table II-2: Age Structure of the Population: 1980

<u>Age</u>	<u>Total</u>	<u>% Population*</u>
0-4	4,913	8
5-17	11,800	18
18-64	37,171	59
65+	10,471	16

*may not total 100% due to rounding

Source: U.S. Census 1980.

group in Escondido is people of Spanish origin. According to SANDAG, most of these people are of Mexican origin. The census probably has under-counted the City's Hispanic population, because there are other data which indicate that there is a sizeable population of undocumented aliens living in Escondido.

Income. As Table II-4 shows, Escondido residents' median income in 1980 was about 12 percent below the county median. The City has significantly more people in the lower income categories than did the county, which would account for the lower median income.

Household Size. In 1980, SANDAG estimated that the average household size within the Escondido City Limits was 2.54 people while the average for the General Plan area was 2.64. In contrast, the average household size for San Diego county in 1980 was 2.68. The City's relatively small average household probably reflects two things: the City's housing unit mix and its age structure. Duplexes, apartments, and mobile homes accounted for almost half of the total housing units in Escondido in 1980. These types of units all tend to be smaller and can accommodate fewer people than single-family homes. Although comparable data are not available for the General Plan area, single-family homes accounted for over 60 percent of the county's housing units, thus explaining at least some of the difference in household size between the City and the county. Also, older people tend to live in smaller households than do young families with children. Since Escondido has a higher percentage of people over the age of 65 than the county, this probably further contributes to the small household size.

B. HOUSING

1. Housing Overview

In 1970 Escondido had 13,606 total housing units. By 1980 this number had virtually doubled to 27,153 representing a 99.6 percent growth rate. Over the same time period, the county's housing stock increased by about 60 percent. Both the City and the county experienced a tremendous residential construction boom in the late 70's as the entire Country pulled out of a recession. However, high interest rates and some slowing down of the economy caused housing starts to fall off again in the early 80's. Interest rates dropped down again in the mid-80s triggering another tremendous construction boom that lasted about 3 years. Since January 1987 the cycle has begun to dip downward again as a result of the new tax legislation and increasing interest rates. Escondido's housing stock is expected to continue growing a fairly rapid rate through out the next decade. But, as the more desirable building locations are developed, the rate of growth will begin to decline and eventually taper off.

2. Housing Stock Characteristics

Housing Tenure and Type. In 1970 over 62 percent of the City's residents owned their own homes, however by 1980 the number of renter occupied units had increased by 135 percent and home owners now accounted for less than 55 percent of the City's residents. Because the elderly are an important segment of Escondido's population,

Table II-3: Race - Ethnicity of the Population: 1980

<u>Race - Ethnicity</u>	<u>Escondido</u>		<u>San Diego County</u>	
	<u>Number</u> <u>#</u>	<u>Percent</u> <u>%</u>	<u>Number</u> <u>#</u>	<u>Percent</u> <u>%</u>
White	52,804	82.1	1,374,644	73.8
Black	263	0.4	102,165	5.5
Asian	1,165	2.5	92,856	5.0
Spanish*	9,378	14.6	275,177	14.8
Other	<u>745</u> <u>64,355</u>	<u>0.5</u> <u>100</u>	<u>16,999</u> <u>1,861,846</u>	<u>0.9</u> <u>100</u>

*persons of Spanish/Mexican origin have been subtracted from each race category and shown separately as "Spanish"

Source: U.S. Census 1980.

* * * * *

Table II-4: Household Income Distribution: 1980

	<u>Escondido (City)</u>	<u>San Diego County</u>
Median Income	\$15,258	\$17,107
under \$10,000	32%	27%
\$10,000-20,000	32%	30%
\$20,000-30,000	21%	21%
\$30,000-40,000	9%	11%
\$40,000-50,000	3%	5%
over \$50,000	3%	5%

*Source: U.S. Census 1980.

it is interesting to note how they fit into the City's overall tenure pattern. Through a special tabulation of 1980 Census data, SANDAG (City of Escondido, 1985) determined that almost 65 percent of the City's households that were headed by people over the age of 62 owned their own homes. This indicates that the City's elderly population is probably slightly more affluent than the general population.

As Table II-5 shows, single-family homes comprised over 50 percent of Escondido's housing stock in 1980. This is considerably lower than the county where single-family homes accounted for over 60 percent of the housing stock. Both the City and the county had a similar proportion of duplexes and multi-family units (apartments) in 1980. But, Escondido has a much higher proportion of mobile home than the county.

Housing Age and Condition. Over 75 percent of the City's housing stock in 1980 had been built since 1960 as shown in Table II-6. Housing age is generally considered to be one of the best indicators of housing condition. Generally any units that are over 40 years old are more subject to deterioration than units built more recently. Based on this indicator alone, it would appear that overall, the housing stock in Escondido is in relatively good condition. However, in a City that has been incorporated for 100 years, there are likely to be concentrations of older houses that may have become rundown or have substandard plumbing and or wiring.

Without doing a detailed house by house survey it is difficult to develop a suitable measure of housing condition. However, there are certain data available from the U.S. Census that can help identify areas where housing conditions may be fair or poor. This data is only available at the census tract level so it is very general and covers relatively large areas comprising sometimes as many as several hundred housing units. The actual variables used for this analysis were selected based on conversation with local experts (McLaughlin 1987). They include the percentage of residents in the area whose income is below poverty level, median income of the census tract residents, and number of households where overcrowding and inadequate plumbing were reported. Figure II-1 shows all of the census tracts in Escondido. Those tracts which, based on an analysis of the above mentioned variables, appear to have the highest potential for rundown or otherwise substandard housing are shown in the shade pattern. The results of this analysis were checked against the results of a blighted land survey done by the City in 1984 as part of the supporting documentation leading up to adoption of the Redevelopment Plan (Escondido Redevelopment Agency 1984). This study was based on a parcel-by-parcel survey of all structures in the proposed redevelopment area. Its findings show the City's most blighted areas to be in the census tracts shown on Figure II-1. This finding has added validity to the analysis conducted for this report and strengthens the assessment that those areas indicated here should receive a high priority for any rehabilitation programs sponsored by the City.

3. Future Housing Demand

SANDAG estimates that between 1980 and 1990 Escondido will increase its number of households by 6,777 (City of Escondido 1985). This assumes that the City's total population in 1990 will be 79,900 and the average household size will be 2.37 persons. If the average household size were to remain constant 2000 then an additional 7,763 housing units would have to be built between 1990 and 2000 to accommodate the City's projected population of 82,800 (comparable data are not available for the entire Planning Area).

Table II-5: Structure Type for Escondido and San Diego County: 1980

<u>Unit Type</u>	Escondido		San Diego County	
	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>
Single-Family	14,537	53.6	437,772	61.0
Duplex	862	3.2	24,554	3.4
Multi-Family	8,464	31.2	218,627	30.5
Mobile Home	3,264	12.0	37,258	5.2
TOTAL	27,127	100.0	718,211	100.1

Source: 1980 Census.

Table II-6: Housing Age for Escondido and San Diego County

<u>Year Built</u>	Escondido		San Diego County	
	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>
1970-1980	13,760	50.7	287,108	37.6
1960-1970	7,671	28.3	167,369	21.9
1950-1960	3,710	13.7	138,926	18.2
1940-1950	971	3.6	61,241	8.0
Before 1940	1,015	3.7	63,567	8.3
TOTAL	27,127	100.0	764,122	100.0

Source: 1980 Census.

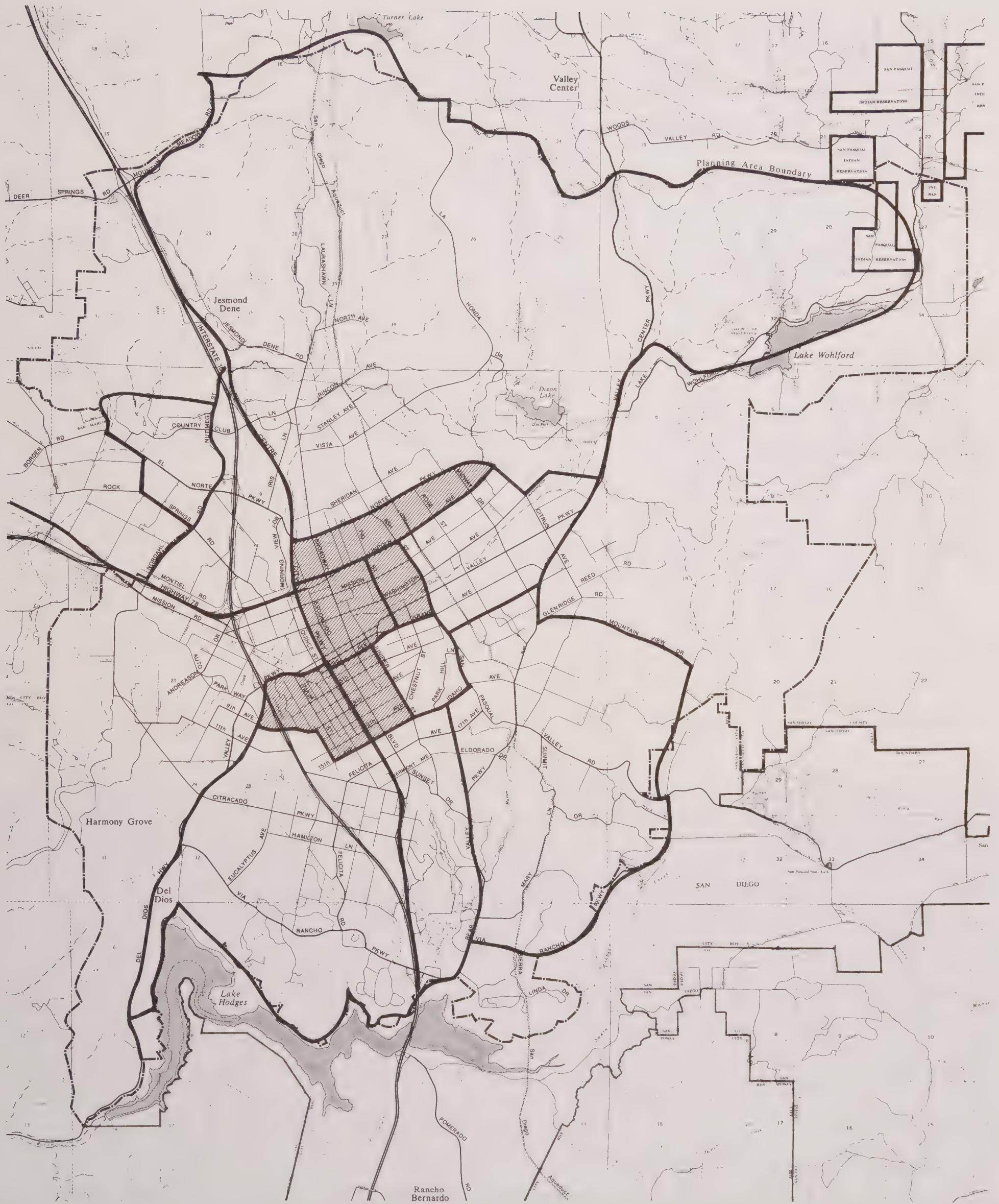


Figure II-1 HOUSING CONDITIONS

- Census Tract Boundary
- ▨ Areas Most Likely to Have Housing in Poor Condition

Source: 1980 Census.

ESCONDIDO GENERAL PLAN PROGRAM



4. Other Housing Issues

Mobile Home Parks. Mobile homes account for a very important component of Escondido housing stock. Over the last several years there has been considerable concern within the senior community over escalating rents and increasing maintenance problems. In 1983 an "Accords Committee" was established to help mediate problems between mobile home park tenants and owners. To date, its impact has been limited since few disputes actually presented for resolution and the decisions are not in any way binding. Earlier this year, the City Council was considering enacting mobile home park rent control. At that time a representative group of park owners and renters were asked to negotiate a rent control ordinance that would be acceptable to both parties. So far, these negotiations have made little progress. In the mean time, the Council has decided to assist some mobile home park tenants in buying their spaces to form what are essentially mobile home park condominiums.

Elderly Housing. In recent years many inland southern California communities have experienced a major influx of senior citizens who are looking for retirement homes in areas where there is a mild climate, affordable housing, and some urban cultural amenities. Since Escondido has all three of these qualities, it has become very attractive to many retirees. Affordable housing for seniors has become an increasingly high priority in Escondido.

In 1982, the Council adopted an ordinance to encourage construction of senior housing by offering developers density bonuses and by reducing parking requirements. The program was a major success with over 1,800 units being built within a four year period. Indeed the program was too successful and by early 1987 there was an overall thirty-six percent vacancy rate for sixteen large senior housing complexes built under the special legislation (Times-Advocate 1987). The Council has now repealed this ordinance but its effects could raise the need for additional public policy decisions regarding the conversion of these units from seniors only, to family units. The long term policy implications of both this program and the one mentioned above regarding mobile home parks should be considered in more detail as part of the general plan revision program.

Housing Affordability. Many residents have expressed concern over the lack of affordable housing in Escondido (City of Escondido 1987). These people said that there are not enough small single-family homes for sale within the City that are priced low enough to be affordable for young families. Housing experts on City staff have also identified a need for additional low cost multi-family housing to accommodate low income renters (Cohn 1987).

Sources of Data

Escondido Redevelopment Agency. 1984. Escondido Redevelopment Plan and Project Area.

City of Escondido. 1985. Housing Element: An Element of the General Plan.

City of Escondido. 1987. Draft Community Workshops Report.

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Times-Advocate. 1987. "Housing Boom for Seniors is a Bust." March 23.

III. LAND USE

A. INTRODUCTION

According to SANDAG, almost 60 percent of the total land within Escondido's Planning Area is already developed. Most of this development is on flat valley floors or on slopes that are angled at less than 25 percent. It is estimated that about 60 percent of the land left for development (including land currently in agricultural use) is on steep slopes (slopes angled at more than 25 percent). Much of the remaining 40 percent is also on hillsides, rather than flat land.

To some extent, the Planning Areas' topographical characteristics will automatically determine the future land uses and development densities of currently undeveloped areas. Generally, only residential development is suited to construction on hillsides and it is considered prudent planning to decrease density in inverse proportion to increasing slope angle. However, this does not mean that all of Escondido's future growth must be residential, nor does it mean that the City can not hope to achieve a better balance between its residential and non-residential land uses. Indeed, there is a large supply of land within the City that is currently developed but is underutilized; meaning that it could be redeveloped to accommodate more intensive uses. It is this land combined with the currently undeveloped land that form the City's entire development potential.

This Chapter focuses on documenting Escondido's existing land use pattern and on identifying where both new development and redevelopment could occur within the Planning Area. It is important that new development be viewed with the context of the existing land use pattern so that any incompatible uses can be segregated, the character of existing neighborhoods can be maintained, and growth can be related to existing infrastructure and public facilities.

B. EXISTING LAND USE PATTERN

When Escondido was first incorporated in the late 1880s, its focal point was the commercial activities located in the area that is still the downtown. Residential neighborhoods were located to the north and south of the downtown. Additional commercial areas extended east and west along Valley Parkway as well as north and south along Centre City Parkway. Agricultural activities were located around the City's periphery starting on the valley floor and extending up the hillsides. Indeed Escondido's development pattern parallels almost perfectly a pattern common among many cities. The most intensive land uses are located at the center of a circle with gradually less intensive uses forming concentric rings around this core. However, many cities following this pattern have much larger concentrations of industrial activities within the urban core. The fact that Escondido developed mostly as a commercial center is reflected in the fact that only commercial activities are located in its core while industrial uses have been segregated off to the west of the downtown.

The City's original street system was laid out on grid; commercial development was limited to the downtown shopping district and along major arterials; and single family homes comprised most of the residential neighborhoods. This pattern has begun to break down in some areas of the City. Multi-family housing projects are beginning to encroach into existing single family areas. Strip commercial developments are springing up in conjunction with new residential development. And, even the traditional industrial areas are beginning to be converted to non-industrial uses. Table III-1 shows the total gross acreage currently developed in each of these various uses. Figure III-1 shows their locations. A more detailed discussion of each use is included below.

Residential

Residential uses account for over one-half of the total developed land within Escondido's Planning Area. The predominance of residential development is one of the features that gives Escondido some of its character as a small rural community. This is particularly true in the south eastern section of the City where most of the homes are located on large parcels and are surrounded by trees and other foliage.

Section II-B provides a detailed discussion of the number, type, and condition of Escondido's housing stock. While the single family house is the most common housing type in Escondido, there has been an increasing amount of multi-family unit construction in recent years. Some of this has been in response to the ordinance enacted in 1983 giving incentives to developers to build senior citizen housing, and some of it has been in response to general market forces. In any case, some of these multi-family units are being build in existing single family neighborhoods. This trend is most noticeable in some of the older neighborhoods south of Valley Parkway where old dilapidated housing is being torn down and replaced with apartments. In general, apartments are not considered incompatible with single family homes if high-quality design is used to counteract problems of visual screening, lack of privacy, and parking.

Industrial

Although industrial land only accounts for about 2 percent of the City's total development, it is a critical component of the economy. The City's historic industrial base developed accommodated the needs of agriculture which was Escondido's dominant economic sector for many years. With the decline in agriculture, the City's economic base has undergone a transformation. It now includes over 165 manufacturing businesses, many of which are in electronics and communications (Escondido Economic Development Commission 1986). Over 50 percent of these establishments employ 30 or fewer people (Spaulding 1987).

In 1983 the Planning Department conducted a survey of industrial land uses within the City. At that time, only 42 percent of industrial zoned land was in industrial use. About 12 percent was in either residential or commercial use, about 36 percent was vacant and about 11 percent was classified as "underutilized". Underutilization refers to land which is not being used up to its full potential given its zoning. This would include land that has vacant or partially filled buildings, land used for open storage, and land being used for non-designated parking. According to the City's assessment, almost 150 acres of the industrial zoned land, including industrial and non-industrial uses, was in transitional or deteriorated condition indicating underutilization and potential for redevelopment (City of Escondido Planning Department 1983).

Table III-1: Existing Land Uses

<u>Use</u>	<u>Gross Acreage</u>	<u>Percent Total</u>
Residential	14,560	34%
Industrial	1,002	2%
Commercial	944	2%
Open Space and Recreation	876	2%
Agricultural	7,673	18%
Other	1,545	4%
Vacant and Undeveloped Land	<u>16,173</u>	<u>38%</u>
TOTAL	42,773	100%

Source: SANDAG.

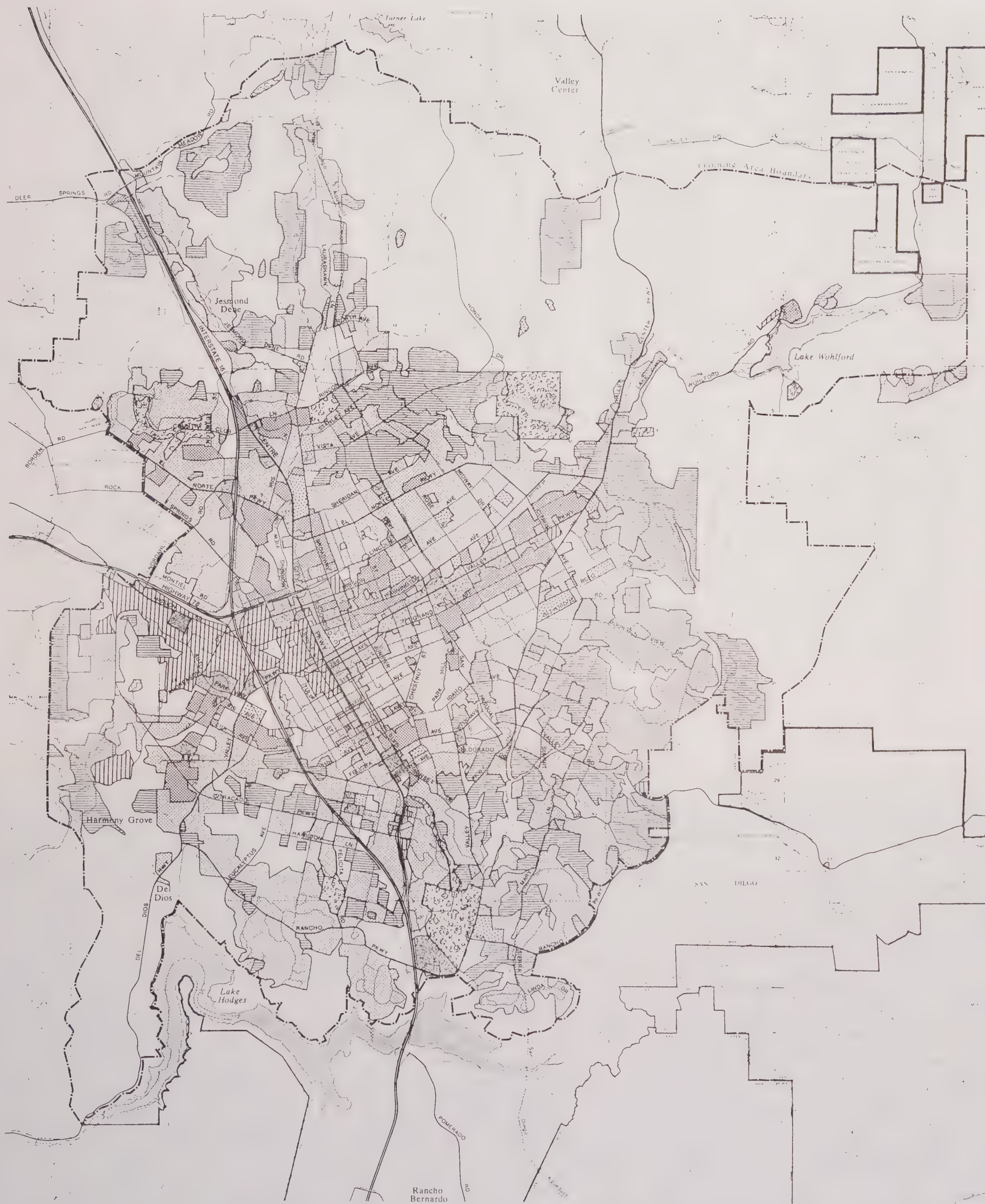
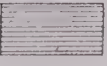
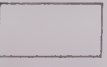


Figure III-1 EXISTING LAND USE

-  Single Family Residential
-  Multi Family Residential
-  Commercial
-  Industrial
-  Open Space
-  Agriculture
-  Vacant and Freeway
-  Other Uses

Source: San Diego Association of Governments

The City's Economic Development Commission has been working for many years to strengthen and diversify Escondido's economy by supporting industrial development and attempting to attract new businesses to the area. This effort has been fully supported by the Escondido Chamber of Commerce. Both groups are concerned over the future of manufacturing activities in the City in relation to two factors. They observe continual down-zoning of industrial land to commercial uses, which decreases the land available for industrial activities, and they feel there are too few large parcels that could accommodate campus-style industrial development associated with the high-technology and electronics industries (Spaulding 1987, Ferguson 1987).

Commercial

Escondido is currently the commercial hub of the inland north county area. Although commercial land uses constitute only about 2 percent of the City's developed land, they generated an estimated \$9.8 million in sales tax revenues in 1986. North County Fair, a super-regional shopping center which opened in 1986, is expected to generate \$4.3 million in sales tax revenues, supplemental rents, and property taxes each year. In addition, the City has about a dozen community-serving shopping centers with several more under construction (Escondido Economic Development Commission 1986).

Most of the City's commercial activity is concentrated in strip commercial development or shopping centers located along the major thoroughfares. The older traditional storefront shopping areas, including the downtown, have been very hard hit by the proliferation of new shopping centers. Efforts have been underway for some time to counteract this trend in the downtown. In 1986 the City Council adopted a conceptual land use plan for this area and a specific plan is currently being drafted. The intent of this plan is to shrink the amount of retail activity downtown while encouraging more office development. The new city hall, which should be completed in December 1987, and Palomar Hospital, which is also currently undergoing extensive expansion, are expected to serve as anchors for the downtown. Their presence is expected to attract additional office users as well as some new retail and service oriented businesses.

Tax revenues generated by commercial activity, have enabled the City to undertake some very worthwhile projects including construction of a multi-million dollar civic center complex. However, the City may have, at least for the short term, reached its saturation point for commercial development. Many citizens have observed that there are vacancies in most shopping centers; that the newer centers are beginning to drain business away from older locations; and, that some areas are over-served by shopping while other areas do not even have a supermarket (City of Escondido 1987).

Open Space And Recreation

Escondido has 3 regional parks that account for most of the City's open space and recreational land. While these parks offer a variety of activities, there are still insufficient recreation opportunities at the neighborhood level. For more detailed discussion of this issue, see Section IV-B.

Agriculture

According to SANDAG, approximately 18 percent of Escondido's land is in agricultural use. This makes agriculture the third largest land use following undeveloped land and residential development. In 1985 the four largest agricultural products in the Escondido area in terms of gross sales were livestock, poultry, and milk (\$22 million); avocados (\$20 million); nursery products and flowers (\$13.6 million); and, citrus (\$11 million) (Escondido Economic Development Commission 1986).

While Figure III-1 shows the general location of this land, Figure V-4 in Section V-B shows which soil types underlying the agricultural activities are considered "prime agricultural" soils based on the Soil Conservation Service criteria. A further discussion of these criteria is included in Section V-B. A comparison of these two figures shows that very little of the City's existing agriculture is actually located on prime soils.

Conversion of agricultural land from rural to urban uses is of great concern in Escondido as well as the rest of the state. In 1965, the State Legislature passed the Williamson Act which offered property tax relief to owners of open space and agricultural lands. The owners had to sign a 10-year contract agreeing not to change the use of their land. This law was backed by a state constitutional amendment in 1966. After Proposition 13 was passed in 1978 some of the property tax relief afforded under the Williamson Act became much less significant and many owners under contract pushed for cancellation. In 1981, the State Supreme Court held that local governments could not cancel contracts unless "extraordinary situations" existed. In response, the state legislature passed a bill that same year allowing local governments to cancel contracts during a six month "window period" in 1982 if certain criteria were met. These criteria included strong evidence that the land in question was near existing urban land uses and that the land use following conversion would be consistent with existing local land use plans. During the 6-month window period, owners of an estimated 96,000 acres of land applied to cancel their contracts. About one-third of the cancellations were approved, one-third were denied, and one-third were contested in the courts. In 1986 the state Supreme Court found the 1981 law to be unconstitutional having the effect of promoting development in areas where the Williamson Act was intended to discourage it. Therefore, any owner wishing to cancel a contract had to meet even more stringent criteria than those set forth in the 1981 law (San Diego Tribune 1986).

There currently are 12 agricultural land holdings within the Planning Area. Most of these holdings are not within the City limits and are therefore not in the City's jurisdiction. A few of the largest holdings straddle the Planning Area boundary with the majority of the land falling outside of the Planning Area. Many land owners who are under contract are worried about the long-term viability of their agricultural enterprises and are interested in possibly converting their land to more intensive uses. However, under the Williamson Act, they cannot subdivide their land into parcels that are less than 10 acres. If these owners wish to cancel their contracts, they must file a notice of non-renewal. The contract will expire 9 years from the time this notice is filed. During that time, the City is required by law to maintain zoning and General Plan land use designations that are consistent with agricultural uses, including 10-acre lot sizes.

The future of agricultural land not in Williamson Act contracts is very uncertain due to the high price of water. Many farmers, in particular avocado growers, can no longer afford to pay for irrigating their land. More and more people are beginning to

abandon their groves or are merely cutting down their trees. The deterioration of Escondido's agriculture has two long-range implications for Escondido's future. One, if the City's agricultural enterprises are no longer viable, this will have major ramifications for the local economy. In 1986, it was estimated that for every one dollar of direct value there was for an agricultural product, an additional \$2.16 dollars were indirectly produced in the local economy. In 1985, the value of the area's crops total about \$75 million for a total of \$162 million in revenues produced both by agriculture itself and by related services (Escondido Economic Development Commission 1986).

And two, agriculture is an important part of Escondido's character. Many citizens recently stated that they considered one of the City's biggest assets to be its rural small town feeling. Without its agriculture, a major part of Escondido's existing character would be lost (City of Escondido 1987).

Other

This category includes miscellaneous uses like power line easements, freeways, and other public facilities. Because this land is not likely to change use, nor does it contribute significantly to the City's overall character and/or economic well being, it is not given any consideration in this analysis.

Vacant and Undeveloped

According to SANDAG, there are over 16,000 acres of vacant and undeveloped land in the Escondido Planning Area. This land is expected to absorb the majority of the City's future growth. However, it is also an important resource in terms of giving Escondido its rural character. This land is discussed in more detail below.

C. POTENTIAL LAND SUPPLY

Type of Available Land Supply

Escondido has three types of land that can accommodate future development. The first is land which is currently undeveloped. While this represents the biggest proportion to the land supply, most of this land is on hillsides with steep slopes thus limiting the types of uses that could locate there. The second is underutilized land. These are already developed areas where the existing use is not as intensive as it could be either because it does not use all of the available land on the parcel; or because the current use could be replaced entirely by an economically more productive activity. And, the third type of land is in areas which are developed but where a transition from one type of use to another is beginning to occur. For example, some of Escondido's older residential areas are developed primarily in single-family homes. However, land prices, and the physical condition of some of these older homes have made it more lucrative for developers to tear down the existing houses and build more intensive multi-family units.

Location of Available Land Supply

All three types of land supply mention above are located throughout the Planning Area. But, because this area is so large, the most efficient way to analyze the supply was to create 14 planning subareas as shown on Figure III-2. Subareas 1 through 11 are on the Planning area's periphery and include most of the undeveloped land. Subareas 12 through 14 are older developed areas that have underutilized land and show some potential for redevelopment. Each subarea is described in detail below and in Table III-2. The acreages shown in Table III-2 are taken from a different source than the acreages shown in Table III-1. Therefore totals may vary somewhat.

Subarea 1. Almost 60 percent of this subarea is on steep slopes. However, there are large continuous areas on hillsides with slope angles between 0 and 25 percent that would be suitable for residential development. Agricultural activities are located in the southern portion of the subarea along with Dixon Lake. The Daley Ranch Specific Plan has been adopted for an 4,452 acre parcel within this subarea. This plan calls for high quality residential development.

Subarea 2. This subarea includes the most remote portions of the Planning Area. There is virtually no development in the subarea and almost no agriculture. However, the land in the subarea's eastern end that is not steep slopes has been classified as prime agricultural land as shown in Figure V-4. About 65 percent of the land is on steep slopes. Land on slopes angled at 0 to 25 percent could accommodate residential development although some areas are completely surrounded by steep slopes making access difficult.

Subarea 3. This subarea includes Lake Wohlford as well as the 872 acre Cloverdale Ranch Specific Plan area. Its western perimeter is contiguous to the eastern edge of Escondido's urbanized area. Most of the land is currently in agricultural uses, even areas on steep slopes. A portion of the area just east of Lake Wohlford had been classified as prime agricultural soil as shown on Figure V-4.

Subarea 4. Over one-quarter of this subarea has already been developed as large lot residential. The residential uses are interspersed with agricultural activities. The soils in the most northeastern corner of this subarea have been classified as prime agricultural land as shown in Figure V-4. Less than 20 percent of the undeveloped land is on steep slopes.

Subarea 5. There is considerable existing residential development in this subarea but it is primarily concentrated between Citracado Parkway, Interstate 15, Hamilton Lane, and Eucalyptus Avenue. The balance of the land is either undeveloped or in agricultural use.

Subarea 6. This subarea also contains extensive concentrated residential development. Over 65 percent of the undeveloped land is on steep slopes. The remaining balance is on hillsides with 0 to 25 percent slopes.

Subarea 7. Almost three-quarters of the land in this subarea is undeveloped open space on steep slopes. There is a small pocket of residential development in the northwestern corner that is relatively isolated from other urbanized areas. A small portion of the hillsides in the northeastern corner of the subarea are in agricultural use.

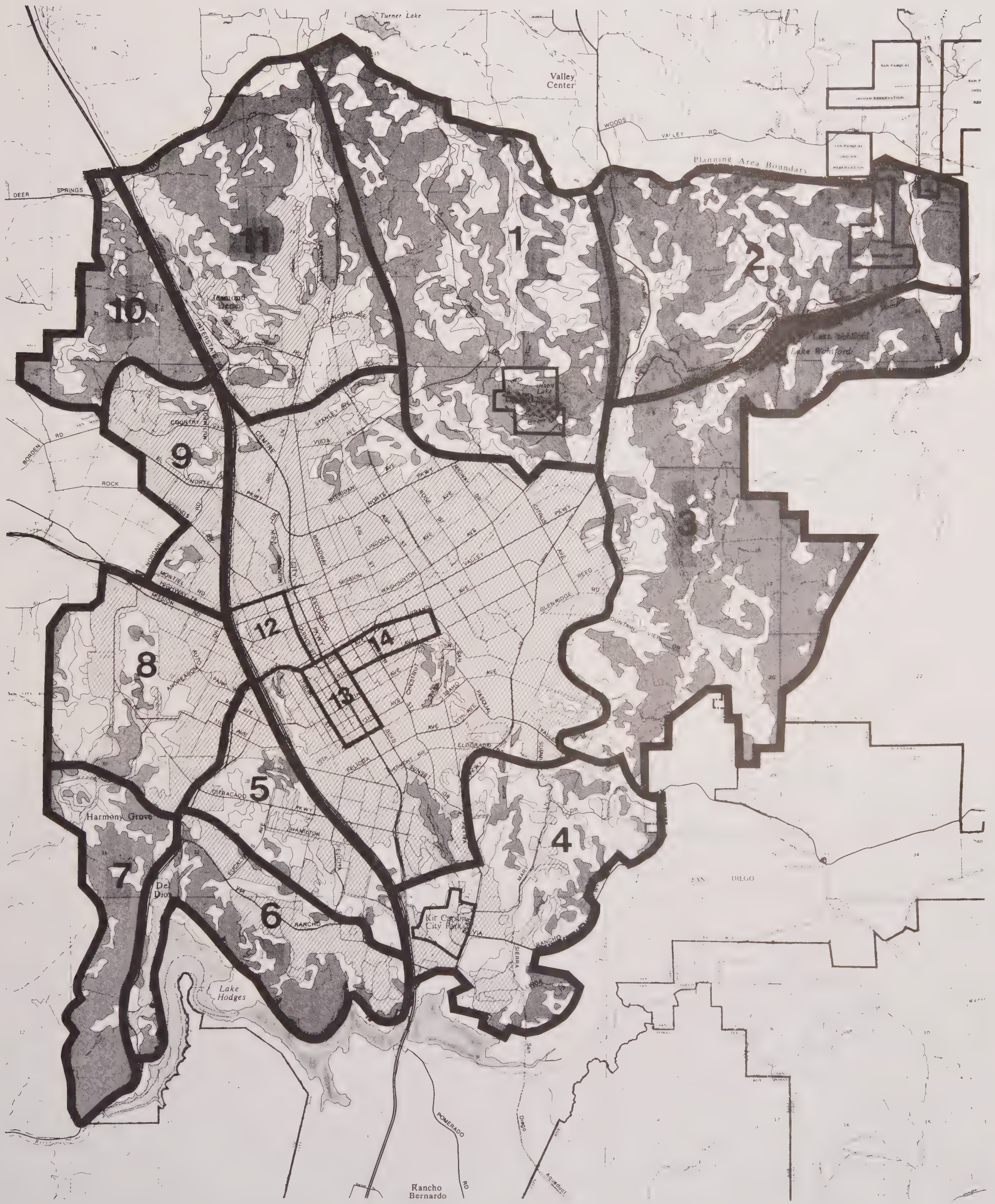


Figure III-2 PLANNING SUBAREAS

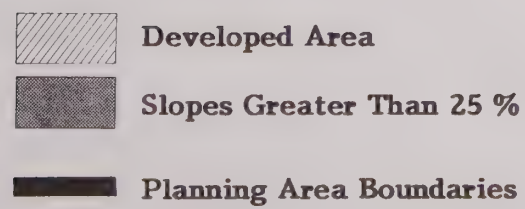


Table III-2: Subarea Characteristics

<u>Planning Subarea</u>	<u>Total Acres</u>	<u>Acres on Slopes Greater Than 25 Percent</u>	<u>Percent Total</u>	<u>Existing Character</u>
1	6,560	3,780	58	410 acres developed in large lot residential use. Some agriculture in southern portion.
2	4,850	3,130	65	Virtually undeveloped. Most developable land is isolated by steep slopes.
3	7,140	4,340	61	Adjacent to urbanized areas along its western boundary. About 4 percent is in residential use. Most of the balance is in agricultural use.
4	3,500	640	18	Over one-quarter of the area is in large lot residential use. Most of the balance is in agriculture.
5.	1,800	140	8	About 40 percent in residential uses interspersed with undeveloped open space and limited agricultural activity.
6.	2,325	915	40	Some areas of intensive residential development interspersed with undeveloped open space.
7.	1,890	1,350	71	Physically isolated with small amount of rural residential in norther section.
8.	2,950	375	13	Contains major portion of City's industrial land. Much of this land has good potential for redevelopment. Some residential which is buffered from industrial activity by topography.

continued . . .

Table III-2 (continued)

<u>Planning Subarea</u>	<u>Total Acres</u>	<u>Acres on Slopes Greater Than 25 Percent</u>	<u>Percent Total</u>	<u>Existing Character</u>
9.	1,690	130	8	Underutilized residential land interspersed with open space.
10	1,720	1,230	72	Isolated pockets of residential development with limited agricultural activity. Balance in undeveloped open space.
11.	4,870	3,185	65	Extensive residential development on flat land. Limited agriculture in northern area. Balance is undeveloped open space.
12.	260	—	—	Primarily industry and heavy commercial. Some older manufacturing with excellent potential for redevelopment.
13.	290	—	—	Mix of run-down residential, older commercial, and some industrial. Has good potential for redevelopment.
14.	240	—	—	Older commercial and residential. May be appropriate for redevelopment as mixed use area.

Source: Sedway Cooke Associates.

Subarea 8. This subarea contains Most of Escondido's industrially zoned land. Portions of this land have already been identified as underutilized and appropriate for redevelopment. Commercial uses are also interspersed with the industrial activity. The subarea also has some residential development which is, for the most part, buffered from the industrial and commercial activities by topography. Only about 25 percent of the undeveloped land is on steep slopes. Agricultural activity is limited to an area adjacent to the subarea's western boundary and to isolated parcels interspersed with both residential and industrial uses.

Subarea 9. Although this subarea appears to be mostly developed, the development is very low intensity residential interspersed with large areas of undeveloped land. This is particularly apparent in the areas long Highway 78 and Interstate 15. Because of the proximity to the regional road network and industrial activities to the south and east, these areas could potentially be redeveloped as non-residential uses without necessarily affecting the residential characters of the subarea's northern portion.

Subarea 10. Almost three-quarters of this subarea is on steep slopes. There is almost no existing development in the subarea and relatively little agricultural activity. About 90 percent of the subarea is included in the Palos Vista project, a large scale residential development recently approved by the City Council.

Subarea 11. The southern boundary of this subarea is adjacent to Escondido's urbanized area. Two fingers of residential development extend up the subarea's valleys. The eastern finger is more extensive and is directly adjacent agricultural activity which is on soils that have been classified as prime agricultural land as shown on Figure V-4. There are numerous undeveloped parcels in the subarea's southern portion which would be appropriate for infill development. Undeveloped land in the subarea's northern portions tends to be on steep slopes and in agricultural use.

Subarea 12. Manufacturing and heavy commercial activities comprise Most of the existing land uses in this subarea. Some of the uses older are underutilized and/or deteriorated making them prime locations for redevelopment.

Subarea 13. This subarea contains a mix of residential, industrial and commercial uses. Most of the existing non-residential structures are old and deteriorated creating a good opportunity for redevelopment. The residential neighborhood between Centre City Parkway and Escondido Boulevard has many rundown units that could be redeveloped into multi-family housing or commercial uses.

Subarea 14. Parts of Escondido's downtown as well as older residential neighborhoods are included in this subarea. While the City has already developed extensive plans for revitalizing the downtown, little consideration has been given to the residential use on its southern perimeter. These areas could be redeveloped into multi-family structures. This may also be an appropriate location to consider mixing uses such as high density residential, commercial, and office.

Sources of Data

Escondido Economic Development Commission. 1986. Escondido Community Profile 1986.

City of Escondido Planning Department. 1983. A Survey of Industrial Land Use in the City of Escondido.

City of Escondido. 1987. Community Workshops Report.

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IV. COMMUNITY FACILITIES

A. INTRODUCTION

As a community, Escondido strives to provide a high level of public and social services to its residents. The City aims to provide parks and recreation facilities, high quality education and efficient police and fire protection. Escondido's population has grown rapidly in recent years, and its demographic profile has changed significantly. In addition to services traditionally provided for children and youth, the City provides extensive programs for its elderly residents, who require health care, transportation facilities and specialized recreation opportunities.

Escondido also has a significant Hispanic community, some of whom require low-cost rental housing, occasional emergency food and shelter, and counseling services. The Hispanic population comprises the largest portion of the City's low income residents.

The proportion of youth in Escondido has grown faster than the City's ability to accommodate them with school facilities and recreation programs. Also, related to overall population growth is the need for urban parks.

In the future, the City will have to make many decisions as to how to continue providing high-quality community and social services to its residents. Difficult decisions will have to be made regarding allocation of resources among numerous services. Goals will have to be set and priorities determined. As part of this process, the City will be evaluating its service standards and grappling with administrative questions such as whether to provide centralized or decentralized facilities.

This section is intended to help the community and the public policy makers to understand the existing level of service being provided through various departments, agencies and facilities. It describes future improvements and major constraints which exist within the current service provision framework.

B. PARKS, RECREATION AND OPEN SPACE

1. Existing Facilities

Escondido's recreation facilities consist of parks, recreation centers, community centers and schools. These facilities are supported by the City's recreation and human services departments and are shown in Figure IV-1. In addition, there are several private facilities which include golf courses and health clubs. Escondido's designated parks and open space facilities include 4 neighborhood parks, 5 community parks and 3 region-serving parks. Table IV-I lists each of the parks.

Neighborhood Parks. A total of 8.4 acres of land is contained in four small neighborhood parks. This is equivalent to 0.11 acre of neighborhood parks for each one thousand residents. Each neighborhood park in Escondido is 2.5 acres or smaller, and serves the population in the immediate vicinity of the park; that is, within a 0.25- to 0.5-mile radius. According to national standards, a typical neighborhood park can be

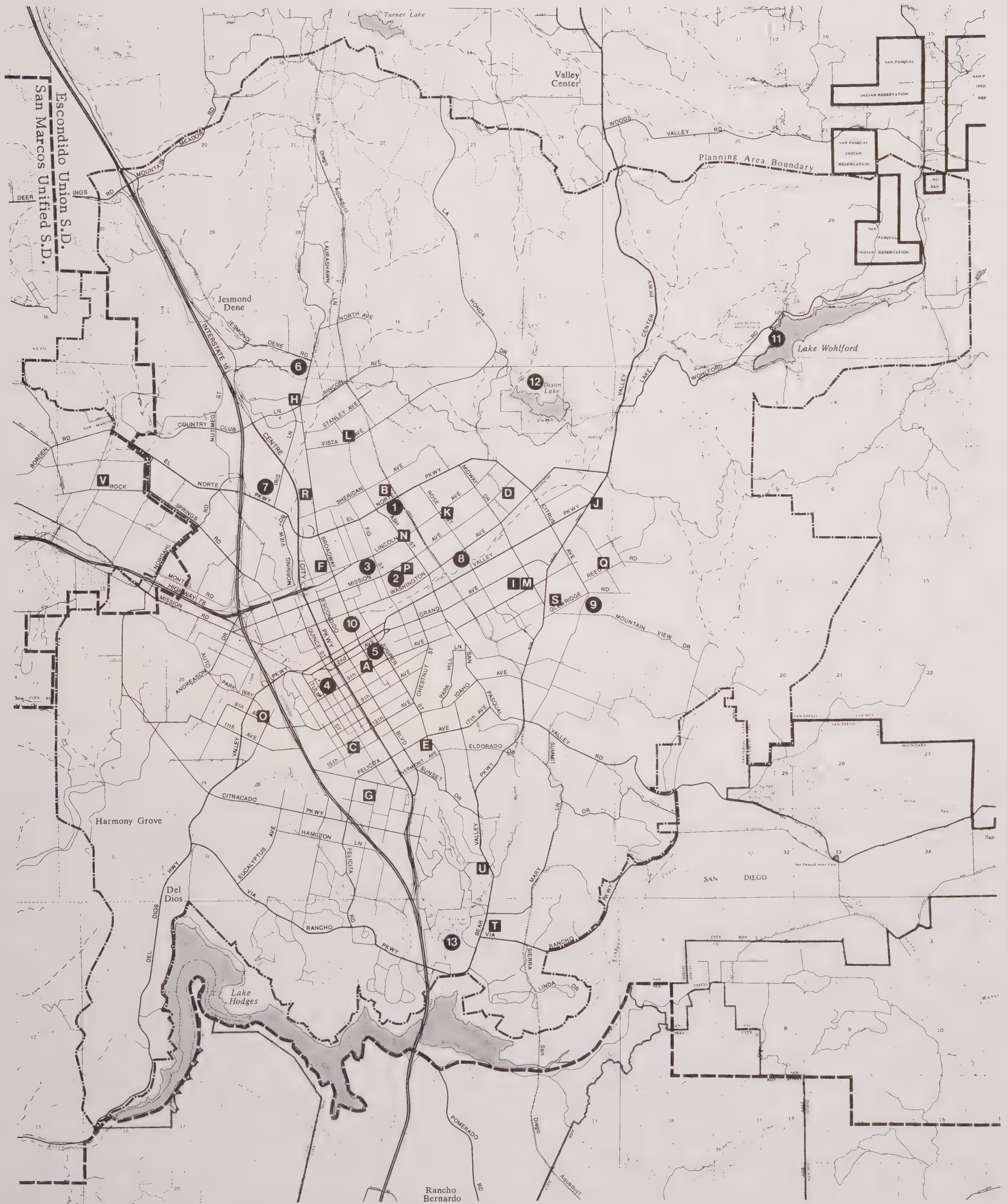


Figure IV-1 PARK, RECREATION AND SCHOOL FACILITIES

① Parks (for Reference to Numbers see Table IV-1).

Ⓐ Schools (for Reference to Letters see Table IV-2).

----- School District Boundary

Table IV-1: Escondido Parks

PARKS

<u>Neighborhood Parks</u>	<u>Developed Acreage</u>	<u>Undeveloped Acreage</u>	<u>Total Acreage</u>
1. El Norte	2.5	—	2.5
2. Elmwood	1.1	—	1.1
3. Youth Activity	2.5	—	2.5
4. Westside	<u>2.3</u>	<u>—</u>	<u>2.3</u>
TOTAL	8.4	0.0	8.4
Acres/1,000 residents ¹	0.11	0.0	0.11

COMMUNITY CENTERS

5. Mathes Community Center

COMMUNITY PARKS

6. Jesmond Dene	25.0	10.0	35.0
7. Rod McLeod	18.0	—	18.0
8. Washington	11.0	—	11.0
9. Mt. View	—	23.0	23.0
10. Grape Day	<u>21.0</u>	<u>—</u>	<u>21.0</u>
TOTAL	75.0	33.0	108.0
Acres/1,000 residents ¹	0.94	0.41	1.36

REGIONAL PARKS

11. Lake Wohlford	1,200.0	—	1,200.0
12. Dixon Lake	500.0	—	500.0
13. Kit Carson	<u>100.0</u>	<u>185.0</u>	<u>285.0</u>
TOTAL	1,800.0	185.0	1,985.0
Acres/1,000 residents ¹	23.7	2.7	26.4

¹Based on State Department of Finance 1986 population estimate of 79,600 in the City of Escondido.

Note: Park numbers refer to Figure IV-1.

expected to serve a total of 2,000 to 5,000 people, depending on the facilities in the park and the location.

Neighborhood parks in Escondido typically contain playgrounds or tot lots, turf areas and restroom facilities. El Norte and Westside parks have picnic tables and barbecue pits as well. Westside and the Youth Activity center both contain recreation buildings. Basketball and volleyball courts are found at Westside. Tot lots, playgrounds, turf areas and courts generally draw from the immediate population (0.25 mile); whereas barbecue pits and recreation buildings can potentially draw residents from farther away (0.5 mile to one mile or more, depending on the demand).

Community Parks. There are 5 community parks in Escondido, all of which are between 10 and 25 acres in size. Of the 108 acres of community parks, 33 acres currently are undeveloped. One park, Mountain View, contains 23 acres and is entirely undeveloped. The remaining 10 acres of undeveloped land are located in Jesmond Dene Park. Currently, there are 1.4 acres of community parks per 1,000 Escondido residents.

Community parks can be expected to serve a somewhat larger population than neighborhood parks. A typical service radius may be 0.5 mile to 2 miles, depending on the facilities the park offers and the demand; and each park may serve a population of 10,000 to 20,000 people. The two parks which contain some undeveloped land are not located in densely developed, urban areas of the city. However, they are located where the City could expect to grow; thus they now function as open space areas and as land banks for future parks when the need arises.

The developed community parks all contain picnic tables and barbecues. Most contain restroom facilities and playground areas. Lighted ball fields are found at Grape Day, Jesmond Dene, and Washington Parks. Washington Park also contains basketball courts, lighted tennis courts, a swimming pool, and recreation building. Grape Day Park features historical structures and a swimming pool.

Regional Parks. Three regional parks serve Escondido's population as well as residents of neighboring communities. These are larger parks: Kit Carson, the smallest, encompasses 285 acres; Dixon Lake is 500 acres; and the largest, Lake Wohlford, is 1,200 acres. The regional parks are important in Escondido, as they make up, in some ways, for the apparent deficit of neighborhood and community park facilities. There are 24.9 acres of regional parks for every 1,000 Escondido residents.

Parks of this size take on a unique character and may contain facilities which are not found in smaller parks. People are often willing to drive for as long as 30 to 60 minutes to use regional parks. Kit Carson Park is only partially developed at this time; 185 acres will be developed according to a master plan over the next 5 to 10 years. Because of the facilities it contains, it functions more as a large community park. Its facilities include several ball fields, soccer fields, and tennis courts. All three regional parks contain picnic and barbecue facilities. Boating and fishing activities occur at the two lakes, and the Dixon Lake facilities include a campground as well.

The significant open space which surrounds Escondido on two sides does not negate the need for additional open space, although it does mitigate, to some extent, the lack of neighborhood and community parks. Escondido has one City-owned and

maintained community center. This is the Mathes Center on South Kalmia. It contains meeting rooms, dance room, arts and crafts facilities, an art gallery, and offices.

Use of School Facilities. Schools are also shown on Figure IV-I. Many of the City's schools serve as de facto recreation facilities. Most of the schools contain playgrounds, ball courts, and turf areas. Baseball, softball, and soccer leagues meet at school yards and on the fields in the community parks and at Kit Carson Park. The City coordinates the use of school facilities by youth and privately sponsored community groups. The City has purchased and installed lights on several school facilities: one lighted soccer field has been installed at Grant Middle School; a lighted baseball and football field was installed at Hidden Valley Middle school; and 1 lighted baseball field was installed at Del Dios Middle School.

Because the Elementary School district charges a fee for use of its classrooms and auditoriums, the Parks Department tries to use City-owned facilities first. Use of high school facilities is limited primarily to gymnasiums at Escondido and San Pasqual High Schools and the baseball field at Escondido High School, for which the City owns and operates the lighting system. Local youth and adult sports leagues which are privately sponsored utilize the High School district's athletic field, applying directly to the school district rather than to the City. The City coordinates use of the Elementary School district facilities for youth sports leagues. The Parks and Recreation Department intends to update its joint use agreement with the elementary school district to provide for construction of additional sports facilities on school property.

Other Community Facilities. Several agencies which are supported through the City's Housing and Human Services Division are discussed in the following sections of this chapter, but they deserve mention here because they serve as recreation facilities. These include the Boy's and Girl's Club; the YMCA; the Joslyn Senior Center, and the Charles Hulme Therapy Pool, which will be constructed at the Nicolaysen Center.

Bicycle Routes. Escondido has an established bikeway master plan, portions of which have already been completed. The master plan designated routes along Broadway, Lincoln Avenue, Ash Street, Via Rancho Parkway, and Bear Valley Parkway, as well as along several other streets and separate paths. Most of the planned routes connect schools and parks. The City had a bikeway committee which worked towards total implementation of the plan through 1981, at which time all but about 23.6 miles of the bike routes were completed. The remainder of the project was not approved by the City Council because it would eliminate street parking. The committee has not met since 1981.

2. Park Development Fees

Escondido has enacted a park fee ordinance. A fee of \$540 is levied for every housing unit which is built. This fee compares to a San Diego county average of \$458 per unit and a North county average of \$607. At the time the development fee ordinance was enacted, Escondido's Open Space Element identified a goal of 6.6 acres of parkland for every 1,000 residents. This was adjusted to 2.5 acres of City-owned community parkland. At that time land cost was estimated at \$55,000 per acre, and development cost at \$40,000 per acre.

3. Park and Recreation Facility Needs and Proposals

Based on the standards included in the park fee ordinance, Escondido lacks urban parks. As mentioned above, there are 24.9 acres of regional parks per one thousand residents. However, "urban" parks—neighborhood and community parks—are lacking; of these, there are only 1.5 acres per 1,000 people. Furthermore, there are specific areas of the city which are not adequately served by parks, such as the area between Kit Carson Park and downtown. The distribution of parks as shown in Figure IV-1 provides some indication of where park facilities are located. By looking at the spatial distribution of the parks, it is possible to identify areas that currently are under-served.

The Parks Department has also identified a need for the creation of a Multi-Purpose Community Center, to be equipped with a full service gymnasium, kitchen and meeting rooms. The City now must rely on the high school facilities for gymnasium use but these are often in use by school programs. The number of existing meeting rooms in the City also is inadequate for the size of the population.

Recently, the privately owned Osbrink Golf Course was put up for sale. A second party agreed to buy the site, intending to develop it as residential. In January 1987, the City decided to intervene in the sale, and to continue operating it as a golf course. Osbrink is a 37.5-acre, 18-hole executive-type course, with a regulation driving range, paved parking area, and several older converted residential structures which are being utilized as a golf shop, offices, and maintenance and storage areas. It is located in the northwest portion of the City. The site is currently in escrow, with the potential buyer planning to use the land for residential development. It is probable that, even if the City acquires Osbrink, it eventually will be developed for residential uses.

The course requires major safety repairs which the City intends to make. Even these repairs will not be sufficient to counteract all of the course's deficiencies, however, and in the next 5 to 7 years, it probably will have to be shut down. When this happens, the site probably will be developed for residential use. In the meantime, the City is looking for another location for a permanent executive golf course.

C. SCHOOLS

Escondido is served by 3 public school districts. The major portion of the City and the surrounding area to the north and east is served by the Escondido Union School district, which operates the elementary and junior high schools program, and the Escondido Union High School district. The western part of the City, including most of the proposed Palos Verdes project area, falls into the San Marcos Unified School district. The jurisdictional boundaries are shown on Figure IV-1.

1. Escondido Union School District

In general, all of the schools have been impacted by population growth in the area. Escondido Union Elementary School district, in particular, was hit hardest by an unanticipated influx in the school age cohort groups (Albizo 1987). While population growth overall had been projected, the demographic make-up was inaccurately

assumed to be low or non-child bearing groups such as single or elderly people. As a consequence, no new schools were constructed in the district during the period from 1974 until this year, when construction on Rincon School began. This has resulted in overcrowding and reduced efficiency.

The district operates 17 schools and serves an area of 70 square miles. As shown on Table IV-2, there are 12 elementary schools (K-6), 3 middle schools (7-8), a continuation school, and a special school for the handicapped. One of the schools, Rincon, is currently under construction and the students are currently housed in a relocatable school facility located on the North Broadway Campus awaiting completion of their own home in late 1987. This strategy, called a "companion school," allows the school to develop an identity and sense of cohesiveness which lessens the disruption that will be created when it moves to a separate campus. The district plans to form other companion schools to accommodate projected increased enrollment until permanent facilities can be constructed.

In the fall of 1987, the district expects overall enrollment to increase by 700 to 1,200 students. Since the already overcrowded elementary schools will be unable to accept additional students, the district plans to relocate almost 1,200 6th-grade students to the middle schools, thus freeing space in the elementary schools. While this alternative solves the district's physical problems, there are concerns that it might create some social problems, in that the less mature 6th-graders may be at a social disadvantage when placed with the adolescent cohort group.

Long-range student enrollment projections are usually based on a number of assumptions which are subject to interpretation. In 1985, the Escondido Union School district completed a Long Range Master Plan in order to identify future needs. In that study, the total capacity of the schools was based on standards which now are no longer used by the district. The currently accepted standards include space requirements mandated by the state. Overall school capacities, based on current standards, are summarized on Table IV-2 and compared to current enrollment. The pupil generation factor of 0.203 students per household for grades K-8 identified in the 1985 Master Plan is still considered valid for future planning. The future enrollment projections are a product of the pupil generation factor and the overall number of housing units constructed. If population growth rates continue as in the past, then the needs will far exceed the district's existing capacity in the near future.

The district anticipates the need to construct 6 new schools over the next 6 to 8 years. Funding already has been approved and sites have been acquired for the first two facilities. The district will soon begin looking for appropriate additional sites. The problem will be to find 10 acres of flat land that are convenient to the City's high-growth areas. In the next several months, the district will undertake a demographic study of the City to determine where the new growth is occurring. The site selection process will follow completion of this study. It is possible that at least some of the new facilities will be treated as companion schools, i.e., they will be placed on existing campuses. In any case, all of the new facilities will include at least 30 percent relocatable structures in response to state requirements.

2. Escondido Union High School District

Escondido Union High School District serves 252 square miles, including Escondido and Valley Center. As shown on Table IV-2, there are 3 comprehensive high schools,

Table IV-2: Public Schools

<u>School</u>	<u>Grades</u>	<u>Year Constructed</u>	<u>Core Capacity</u> ¹	<u>Total Capacity or (No. of Temporary Classrooms)</u>	<u>Existing Enrollment</u>
ESCONDIDO UNION SCHOOL DISTRICT					
A Central	K-6	1938	627	(7)	794
B Conway	K-6	1966	643	(7)	731
C Felicita	K-6	1951	754	(5)	761
D Glenview	K-6	1962	680	(7)	676
E Juniper	K-6	1959	705	(7)	759
F Lincoln	K-6	1943	800	(5)	809
G Miller	K-6	1969	656	(8)	783
H North Broadway	K-6		719	(2)	751
I Oak Hill	K-6	1963	626	(6)	754
J Orange Glen	K-6	1949	568	(5)	668
K Rose	K-6	1961	660	(7)	821
L Rincon ²	K-6	1987	581	(17)	381
M Nicolaysen Ctr.	special		96		62
N Opportunity School			60		12
O Del Dios M.S.	7-8	1962	864		725
P Grant M.S.	7-8	1954	864	3	769
Q Hidden Valley M.S.	7-8	1974	714		644
TOTAL					
ESCONDIDO UNION HIGH SCHOOL DISTRICT					
R Escondido		1954	1,700	1,823	1,565
S Orange Glen		1963	2,000	2,083	1,987
T San Pasqual		1972	1,500	1,764	1,632
U Valley		1976	200	325	431
TOTAL			5,500	5,995	5,615
SAN MARCOS UNIFIED SCHOOL DISTRICT					
V Woodland Park	K-6				

¹Source: David Albizo.

²Scheduled for completion late 1987, currently "companion school" to North Broadway and housed in temporary buildings.

and a continuation high school. Each high school offers 2 college preparatory programs. One is based on the University of California entrance requirements and the other on the California State University models. In addition, the schools offer full business and vocational programs. On-site childcare is available for children of the students. The district makes facilities available for other education programs, including classes offered by Palomar Community College, and cooperates in other joint programs. Public swimming pools, funded by the City, are proposed for each high school site.

The Escondido Union High School District is in the process of finalizing a Long Range Comprehensive Master Plan. Growth projections and student yield rates were generated from data developed by SANDAG and PUMS (U.S. Census Bureau's Public Use Microdata Sample). Overall district student yield rates for grades 9 through 12 are expected to decline from 0.1406 students per household in 1985 to 0.1178 in 1990, and then rise to 0.1367 in the year 2000. Again, the mix of housing will ultimately determine the rate. If more single-family homes are constructed then the rate would increase proportionally. But, even though the yield rates are declining, dramatic increases in the housing stock are projected after 1990. By the year 2000, the district expects over 3,000 additional students which will necessitate at least one additional high school. The Master Plan proposes acquisition of a 50- to 60-acre site within the projected high growth area near Valley Center. Existing attendance boundaries will be adjusted accordingly. Current plans include a \$10 million reconstruction of Escondido High School.

3. San Marcos Unified School District

San Marcos Unified School district boundary overlaps the Escondido City limits. Elementary school students from Escondido attend either Woodland Park or Richland Schools; high school students attend San Marcos High School. All of the schools in the San Marcos Unified School district are currently over-capacity, based on state standards for site size (Okun 1987). Future housing developments, such as the Palos Verdes Project, could have a significant impact on the district. Of the 782 homes proposed for construction over the next 10 years in the Palos Verdes Project, 743 are located within the San Marcos Unified School district. Although the developer has pledged to cooperate with the various schools districts, no requirements to set aside or dedicate a school site were imposed during the project approval process. Acquiring an adequate 10-acre site in the vicinity of the development area may be difficult.

4. Higher Education

There are several institutions of higher learning in the Escondido vicinity. The main campus of Palomar Community College is located approximately 8 miles west of Escondido off Highway 78. The school is a 2-year transfer college which allows students to fulfill their undergraduate requirements close to home prior to entering a 4-year college as a 3rd-year student. Continuing education classes also are offered. Over 24 percent of the present student body resides in Escondido. The Palomar Community College district operates a number of satellite centers for outreach classes including 33 locations in Escondido. Escondido residents could also choose to attend Mira Vista or Mira Costa Community Colleges.

San Diego State University is currently developing a 100-acre North county Campus in the town of San Marcos immediately west of Escondido. This campus will be a general campus and is scheduled for completion in 1990.

D. HUMAN SERVICE FACILITIES

1. Community Characteristics/Social Trends

The City of Escondido values highly its reputation for high-quality human service concerns and facilities. However, dramatic changes in population growth and composition over the last decade are posing challenges to the kinds, quality, and extent of established facilities. Major social trends in Escondido and San Diego county include heavy in-migration; an aging population; an increase in the number of children, but a decline in percentage of children and family size; and an increase in ethnic minorities who now comprise 26.2 percent of the population.

2. Existing Conditions

Recognizing the need for social service planning in response to the rapidly changing community, a Social Services Master Plan for Escondido is currently under review. Escondido human service agencies offer programs in the following areas: protective care, commodity supplies including food and clothing, community information and development, job development, physical health, individual and family counseling, legal assistance, and mental health. Agencies which are supported through the City's Housing and Human Services Division include the Boy's and Girl's Club, the Escondido Youth Encounter, Cadrea, St. Clare's, Escondido Child Development Center, YMCA-Child Development Care Center, Child Care Centers, Charles Hulme Therapy Pool, Alzheimer's Day Care Center, and the Joslyn Senior Center.

According to the Master Plan draft, the following trends in social service provision are expected to continue: cutbacks in public direct service, increased contracted service, increased involvement of volunteers and local planning initiatives merging of agencies, diversification of agency services, growth of the fee-for-service agencies and the for-profit sector, and the possible provision of more human service care at the place of employment.

Major priorities for 1986 identified in the Master Plan report are for 24-hour psychiatric service, the provision of basic needs (as discussed below) and child care (infant-grade 8). Additional service needs identified include improved service for the frail and elderly, for adolescents, and for alcohol rehabilitation and chemical abuse; shelters for those in crisis and for the homeless; sheltered workshops; alcohol detoxification; board and care homes for the mentally disordered; services for the Hispanic elderly; work with ethnic youth groups; day care for the developmentally disabled; and spousal abuse and domestic violence.

Basic Needs. As part of the Master Plan process, a Basic Needs Task Force was established in 1975 to study subsistence needs and provisions in the community for medical care, food, shelter, legal aid, and special needs of high-risk populations. A summary of the Task Force's findings follows.

Medical Care. The Escondido Community Clinic is the only city agency that regularly provides routine medical care (non-emergency) to low-income citizens of the community. The Clinic is a major resource for medical care for the Latino community, with over half of the visits being from Spanish-surnamed clients. (See section on Health Services for further discussion.)

Food and Clothing. The North County Interfaith Council's Crisis Center is a major source of emergency food, as well as a clearinghouse for numerous other services. During the period of July through December 1984, 8,182 persons were served. From January through June of 1985, 8,406 were served, for a 2.7 percent increase. A typical month shows 467 family units served, including children, for a total of 1,684 persons served: approximately 18 percent of clients received emergency food, 17 percent received government commodities; and 10 percent were homeless persons receiving shelter. Additional services included distributing gas vouchers, bus tokens, prescription vouchers, and clothing vouchers. As an initial agency for crisis services, the center attempts to provide basic needs counseling, job referrals, legal assistance, etc., and has documented the need for other support services in the Escondido community.

Shelter/Specialized. Special shelter care for expectant or recent mothers and their children is provided through St. Clare's Home. For the fiscal year 1984-85, the shelter provided care to 75 adults and 54 children, with one-third of these staying short-term (10 days or less and two-thirds staying for longer periods of time. Numerous clients had to be turned away due to problems such as drug use, status as undocumented aliens, lack of room, mental illness, etc. Services for these clients are extremely limited within Escondido.

Emergency/Shelter. The Escondido Youth Encounter's Hidden Valley House provides shelter to adolescent females and their children. For fiscal year 1984-85, the House served a total of 547 clients. Of these, 38 percent were from the Escondido area. 159 women and children had to be turned away; no figures are available on those sent out of the community for service.

Legal Aid. A study of legal services in the Escondido area determined that services are available only on an extremely limited basis through social service agencies that have other main objectives (Joslyn Center, NCIC Crisis Center, etc.). The closest Legal Aid office is in Oceanside and is not readily accessible to Escondido residents. In addition, representation or advice on civil matters is expensive and the limited help available through volunteer attorneys at the local agency level is not adequate to meet demand. The report identified the elderly, the Latino community, victims of spousal abuse, and tenants as high risk groups in need of special attention.

Senior Needs. Because of the increasing numbers of elderly in Escondido, special needs of seniors will be a continuing concern for the future. The Joslyn Senior Center provides health, social, educational, advocacy, nutrition, recreation, and other functions for low-income seniors. Current funding is recommended for an addition to the Joslyn Senior Center. There appears to be an adequate supply of long-term care facilities for seniors. Several convalescent homes provide skilled nursing facilities with 530 beds; numerous residential board and care facilities provide approximately 400 beds. However, many of these programs are not affordable to low-income seniors, as many are operated by private or semi-private agencies with rates of \$1,700-\$2,000 per month (Athan 1987). No federal funding is available. There is a shortage of short-term care facilities for seniors, including social day care, adult protective services, and respite care. In addition, there exists a need

for case management, providing in-home services for the low-income population in Escondido. Redwood Terrace, a non-profit organization, is planning to expand its short-term care services to include some of these areas. Specific senior needs identified in the Master Plan report are:

- Increased demand-response transportation for the frail elderly.
- Increased meals-on-wheels delivery to the needy unable to pay (currently 60 to 70 meals per day are delivered but only to those able to pay).
- Increased in-home supportive services (county homemakers) and a telephone reassurance/friendly visitation program are recommended (CMH Senior Team provides the last but on a time-limited basis).

The City has recommended a grant to the Community Services/Senior Citizens' Advisory Board taxi voucher program to provide necessary transportation to seniors qualified as low income. Also recommended, is the Multi-Agency Human Services Center proposal which includes additional funds for completion of purchase of addition space and necessary renovations. It is recommended that the day care program proposed by Adult Protective Services also be included as a compatible agency in the planning process for possible space allocation, as there is a documented need for adult day care for the frail elderly that is not currently being met in Escondido.

Hispanic Community. The Latino community, including undocumented aliens, is seen by the Task Force as the least served, most destitute group in Escondido, with the fewest resources available. The North county Centro—a local agency with translation and other services specifically tailored to the needs of the Latino community—recently relocated in Escondido. The Task Force identified the following as the most pressing needs: employment, low-cost housing, food, community organization, communication, English instruction, job training, low-cost medical care, legal advice, immigration counseling, transportation, and emergency shelter. The NCIC Crisis Center served 293 members of the Latino community in October 1985 with the largest number of requests being for food.

Care for Children. A Community Task Force on Child Care Services also was formed as part of the Master Plan process. This group identified child day care as a continuing need in Escondido. Currently, approximately 100 licensed family day care homes and centers provide 588 spaces at a cost of \$45 to \$75 per week. According to the Childcare Resource Service, there is a shortage of facilities as well as low-cost spaces. There were 185 sliding-scale spaces available to Escondido in 1985 for preschool, Kindergarten, and school-age children, but all were filled, with a waiting list for vacated spaces. A grant to the Escondido Community Child Development Center for subsidized day care for 15 children for 1 year only is recommended by the City in support of affordable child care. Additional funding is recommended for the City/Schools Day Care project.

3. Funding

The Escondido Social Services Master Plan focuses attention on the need to reduce duplication of efforts and funding. The plan recommends the adoption of specific criteria for all City-funded social services, providing an outline of application and evaluation procedures. Currently, Escondido contributes Community Block Grant Funds to social agencies. Other funding sources include federal, state, county, and

private grants. The expansion of private human service facilities over the last ten years has increased care facilities significantly in many areas, although generally not for low-income clients.

E. HEALTH FACILITIES

Palomar Pomorado Hospital district

Palomar Memorial Hospital, located at 555 East Valley Parkway, provides a full range of in-patient and emergency care to the residents of the City of Escondido and nearby areas. Palomar Hospital, operated by the Palomar Pomorado Hospital district, is a full-service 300-bed acute-care facility. In addition to regular services, the hospital offers a cardiovascular catheterization lab, a pediatric special care unit, chronic renal dialysis, a psychiatric unit, cardiopulmonary rehabilitation, and an oncology center of excellence. A cardiovascular surgical service for open-heart surgery is scheduled to begin in Spring 1987. In 1985, a full-fledged Trauma Center to provide sophisticated emergency medical treatment for severely injured patients was added to the existing 24-hour emergency care facilities.

In the past 2 years, the hospital district constructed a 6-level, 352-space parking garage and an electrical cogeneration plant. Future plans include a major \$50 million program to update the existing 10-story structure originally built in 1950 and to add new facilities. Future capacity will be 338 beds in 1989.

The district operates a second hospital, Pomorado Hospital, at Poway, a few miles southeast of Escondido. This 130-bed hospital offers, in addition to regular services, a 28-bed Chemical Dependency Treatment Program patterned after the "Hazelden Model." A freestanding chemical dependency unit with 36 adult and 12 adolescent beds is scheduled for completion at Pomorado Hospital in 1988.

Additional Health Care Services

Several private Health Maintenance Organizations (HMOs) in Escondido provide health care for their members. Kaiser Permanente provides a small, primary care clinic in Escondido; the hospital is located in San Diego.

The Escondido Community Clinic provides primary health care services to low-income patients on a sliding scale based on the patient's ability to pay. Free services are provided to patients without resources. The clinic offers services in general medical, pediatrics, and family planning, and includes a pediatric dental clinic. In the fall, prenatal services will be added. The clinic now serves predominantly Hispanic women and children, and the staff is fully bilingual. Emergencies are referred to Palomar Memorial Hospital through a cooperatively developed procedure or to the UC Hospital in San Diego in cases where the patient is ineligible for Medicare.

Health Care Needs

Most of the unmet needs for health care services are in the low-income client groups. The North county area has a high number of Hispanic, migratory agricultural workers, many of whom are ineligible for most forms of governmental medical assistance. Other low-income groups include the elderly and single working women with children. The Social Services Master Plan for Escondido found that there were unmet needs in health services for low-income or non-insured groups in the following areas (Van Leuwen 1987):

- twenty-four hour psychiatric emergency care
- perinatal and OB/GYN
- chemical dependency detox for children and adults
- frail elderly care

F. LIBRARIES

1. Existing Facilities and Services

The Escondido Public Library is a centrally located single-service facility serving the City of Escondido and surrounding unincorporated areas (see Figure IV-2). No branch libraries currently exist. The library has a book and periodical collection totalling approximately 128,737 volumes, with an annual circulation of 445,509 (1984-85) (Board of Library Trustees 1986). Other materials include microfilm, movie titles and video tapes. Of the six San Diego county libraries reviewed in the Escondido Public Library Opinion Surveys conducted by SANDAG in 1985, Escondido's library had the least number of materials available per person, offering only 1.6 volumes per person. Associated with this limited book stock is one of the highest stock turnovers in the region (Board of Library Trustees 1986).

Population projections for the Escondido general plan area indicate an expected increase from 83,400 in 1980 to 143,600 by the year 2000, a 75 percent increase. In addition, the evolution of the community from largely agricultural to a mixed residential community of higher income is expected to further increase the requirements for library services. Recognizing the need to expand library services to meet the needs of this changing population, short- and long-range planning goals for expansion of the public library were developed in "A Vision for Excellence: Goals for the Escondido Public Library 1983."

2. Goals, Standards

Goals for the public library identified in this report include improving collection stock and staffing to reach the minimum standards set by the American Library Association (ALA) of 3 books per capita and 1 full-time equivalent (FTE) employee per 2,000 residents by 1990. Currently, the Escondido library holds 1.8 books per person, with 1 FTE per 2,936 residents. Specific recommendations in the report call for the addition of 8.5 FTE by 1990, providing a staff of 36.75 FTE. This still falls short of the 40 FTE needed to meet ALA standards to serve the projected population of 80,000, a figure which is outdated already.

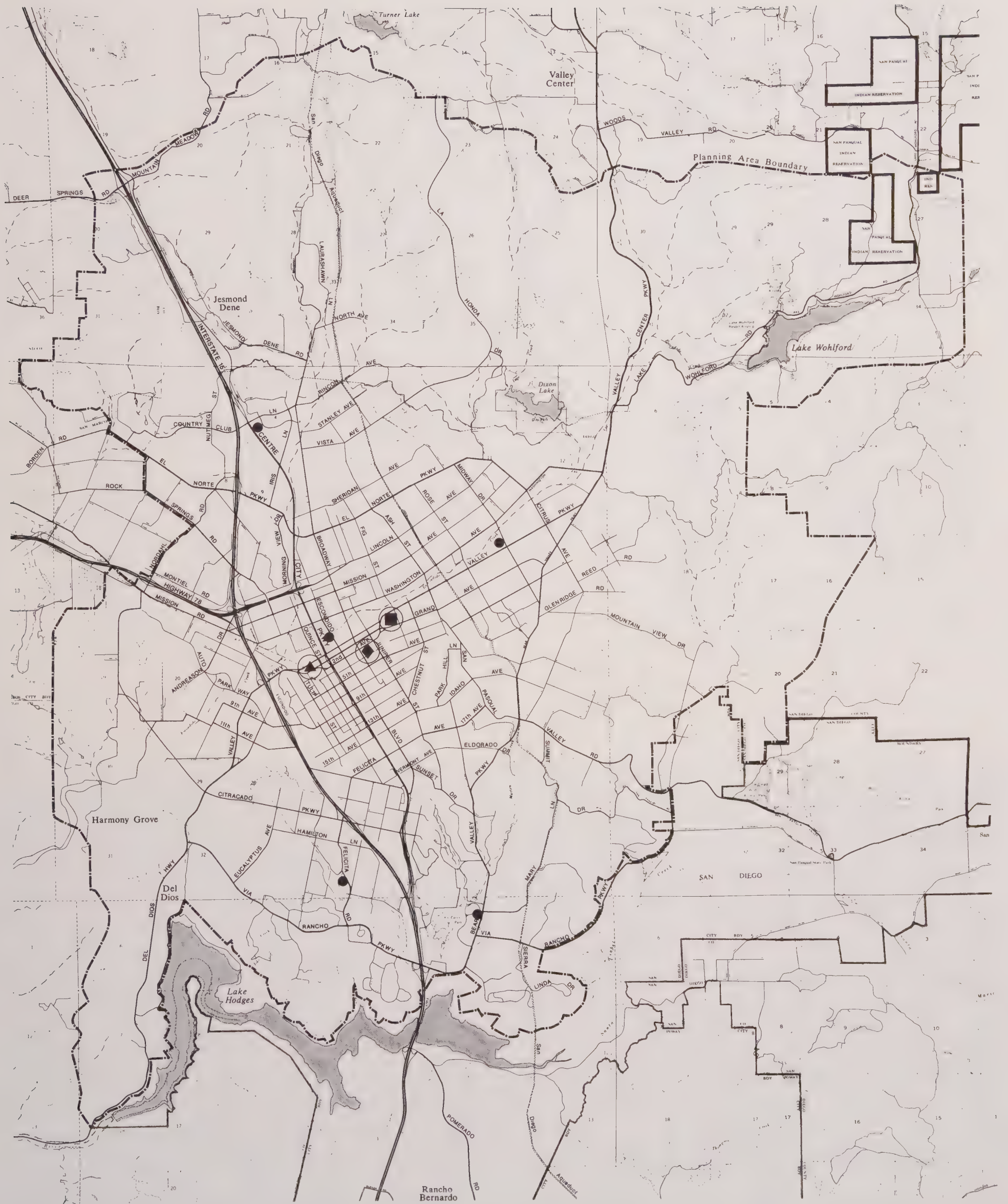


Figure IV-2 COMMUNITY FACILITIES

- Fire Stations
- Palomar Memorial Hospital
- ◆ Escondido Public Library
- ▲ Escondido Police Station

To meet facilities demands, plans call for 2 branch libraries to be developed in the eastern and northern sections of the city, with the eastern branch opening by 1990. General locational guidelines concern areas of high intensity of use, pedestrian traffic, travel time, and circulation patterns. Additional goals include expanding the audiovisual section significantly over the next 3 to 6 years. The central library has a capacity of 10,000 video cassettes. The Mathes Center, the former library next door, is proposed to house this expansion. Associated with these facilities expansions are maintenance programs to improve facilities and lighting standards, automate loan procedures, and increase parking availability; and plans to expand the scope of library services.

3. Financing

The Escondido Public Library currently receives financial support from the city and from state agencies. Financing ideas for proposed library expansion include library development fees, Mello-Roos funds for facility development, or other methods for setting aside branch construction funds. No specific proposals have been developed.

G. POLICE

The City of Escondido Police Department, located at 700 West Grand Avenue, is currently staffed with 94 sworn officers and 50 nonsworn personnel. This level of staffing results in an officer-to-resident ratio of 1.2 to 1.3 officers per 1,000 population, which is higher than the national ratio of 1:1,000.

Calls for service have increased 18 to 20 percent each year for the past 2 years. As a consequence, response times to calls have been slightly longer than the targeted rates and there have been some delays in processing paperwork. In 1986, response time for Priority 1 calls averaged 4 minutes, 19 seconds, and Priority 2 calls, involving serious but not life-threatening incidents, averaged 8 minutes, 6 seconds (Ippolito 1987). The specific factors contributing to the increase are difficult to quantify. Since population growth has been occurring at a relatively constant rate of about 6 percent per year for the past 5 to 7 years, the increase does not appear to be associated directly with population growth but rather with a change in the population density accompanying the shift from a small rural community to an urban center. Another factor may be the City's proximity to the international border with Mexico; the Police Department crime statistics for 1986 indicate increases in incidents involving Mexican nationals. Narcotics are involved increasingly in all types of crime. The anonymity provided by a large community, combined with the ability to move across international boundaries, also may be affecting crime rates. Statistical increases in other types of crime, such as child abuse, may be indicative of an increase in the reporting of incidents, however, rather than an actual increase in the rate.

In 1986, burglary did not increase at the same rate as other crimes due, at least in part, to the Department's Neighborhood Watch program which was expanded to reach six hundred households last year. A similar Business Watch program was instituted in 1986. A Community Alert program is planned for this year to disseminate information on residential burglary MOs.

As the population increases, existing vehicular circulation problems will be exacerbated unless measures are taken to increase traffic flow especially in the major east-west routes across town. Bear Valley Parkway in particular needs to be upgraded. The proposed Harding Street Bridge improvements and signalization projects should help relieve congestion.

The Police Department expects the crime rate to reach a cyclical leveling-off point in the near future even though the population growth rates are expected to continue. Crimes against the elderly are expected to increase concurrent with growth in the elderly population due to the particular vulnerability of elderly people. The overall current officer-to-resident ratio will be maintained by increasing staffing as necessary. Support staff levels also will be increased proportionally. The existing police station location is large enough to accommodate projected departmental growth for the next 5 to 7 years. Parking is the constraining factor. In the future, as population growth shifts north and east beyond Daily Ranch or to the top of the Valley Center grade, and as traffic levels increase, construction of another station may be necessary.

Although the impacts on police and fire service created by major development projects are addressed in the state-mandated environmental review process, impacts created by small or infill projects are not similarly addressed. If all projects could be reviewed for potential impacts, then staffing increases could be justified in advance of need rather than be reactive to crime statistics alone.

H. FIRE

1. Existing Conditions

The Escondido Fire Department operates 5 fire stations within their fire district, as listed below (see Figure IV-2).

Station 1:	310 North Quince
Station 2:	421 North Midway
Station 3:	2165 Village Road
Station 4:	3301 Bear Valley Parkway
Station 5:	2705 Felicita

The Fire Department provides emergency and non-emergency services to the Escondido community including firefighting, emergency medical services, enforcement of fire prevention regulations, maintenance of equipment, inspections and consultation services, fire investigations, training of personnel, public education, and administration of the City's Weed Abatement program.

The Fire Prevention Bureau of the Escondido Fire Department enforces the Uniform Fire Code, Uniform Building Code, and any other related laws and codes of fire prevention adopted by the City of Escondido. The Bureau also enforces regulations regarding usage and storage of hazardous materials and explosives.

The degree of fire protection in a community depends upon fire-protection regulation, capability of the department (personnel and equipment), adequate water availability, accessibility to the fire, and response time. The total Escondido firefighting

staff of 72 corresponds to a resident-to-firefighter ratio of 1,111:1 (Escondido Fire Department 1986), which is higher than the national ratio of 1,000:1. Data collected by the Department indicates a continued upward trend in the number of responses per year over a 10-year period (1977-86). The number of alarms in 1986 was 5,091, representing a 9.8 percent rise over the 1985 figure, and a continuing increase from the 10-year average of 3,636. However, current staffing seems adequate to handle the needs.

2. Issues

Issues of particular concern to the Fire Department in regard to future land use planning are service to the surrounding unincorporated areas and service to new housing developments, particularly the proposed Palos Vista development. In unincorporated areas, a lack of addresses makes it difficult to locate fire calls. Regarding the 967-acre Palos Vista Project, the scale and location of the project are of concern with respect to fire regulations. According to the Escondido Fire Chief, the 782-home development will require sprinkler systems since most of the homes are more than 3 miles from the nearest fire station. The resolution of this issue could influence future development substantially, particularly in outlying unincorporated areas. For the future, the Escondido Fire Department will continue to emphasize fire prevention services as a way to maintain service quality amidst a growing population with increasing demands.

Sources of Data

Albizo David. 1987. Escondido Union Elementary School district, personal communication.

Athan Paul. 1987. Joslyn Senior Center, personal communication.

Board of Library Trustees. 1986. "A Vision for Excellence: Goals for the Escondido Public Library."

Ippolito Mark. 1987. Escondido Police Department, correspondence.

Okun Jeff. 1987. San Marcos Unified School district, personal communication.

Van Leuwen Jerry. 1987. Assistant Director of Community Services, City of Escondido, personal communication.

V. NATURAL RESOURCES

A. WILDLIFE HABITAT AND VEGETATION

1. Setting

The biological resources in the Planning Area, including the City of Escondido and its sphere of influence, were studied using numerous biological reports prepared in and around the area, and aerial photographs. The majority of the land within the Escondido city limits has been developed for commercial and residential use and much of the remaining open areas in the planning area have been disturbed by agricultural use. The periphery of the planning area is largely undisturbed, composed of dense, native chaparral on steeper slopes and hillsides and coastal sage scrub vegetation at lower elevations. Among the scrub vegetation are scattered expanses of disturbed grassland, riparian vegetation that follows most of the stream channels, and occasional stands of oak woodland (Figure V-1; see accompanying Table V-1). Additionally, wetland habitat is associated with the several lakes and ponds that occur within or influence the study area.

A number of sensitive plant and animal species occur within the Planning Area along with special interest vegetative habitats. Significant biological features are herein considered floral or faunal species of rare and/or endangered status, depleted or declining species, and species and habitat types of unique or limited distribution. Sensitive habitats are those which are considered rare or valuable within the region, support sensitive plants or animals, support large numbers of individuals, unique associations, or exhibit particularly high diversity. Three organizations list sensitive plants in California: the California Native Plant Society (CNPS), California Department of Fish and Game (CDFG), and the U.S. Fish and Wildlife Service (USFWS). Sensitive animals are listed by CDFG, USFWS, the San Diego Herpetological Society, and the Audubon Society. Sensitive floral and faunal species that have been observed or are expected to occur in the study area are listed in Tables V-2, V-3, and V-4.

2. Habitat Evaluation

Developed Areas. The vast bulk of the area within the City limits is developed to commercial, industrial, and residential use. A relatively minor amount remains as open land used for agriculture, and even less is vacant natural habitat or park land. In general, the areas mapped as developed are of low value to native wildlife populations and native plants. Exceptions include some riparian (stream) corridors such as Felicita Park and along Bear Valley Parkway, which are immersed in developed land. Wildlife typical of the urban landscape includes Pacific treefrog (*Hyla regilla*), Great Basin fence lizard (*Sceloporus occidentalis longipes*), house sparrow (*Passer domesticus*), European starling (*Sturnus vulgaris*), northern mockingbird (*Mimus polyglottos*), mourning dove (*Zenaida macroura*), Virginia opossum (*Didelphis virginiana*), California ground squirrel (*Spermophilus beecheyi*), and Botta's pocket gopher (*Thomomys bottae*).

Chaparral. Chaparral is the most abundant native vegetation in the undeveloped areas around the City and generally forms a dense closed-canopy cover (Figure V-1). This habitat is common in California and supports abundant wildlife; it is, however, only considered a sensitive habitat in terms of the California Environmental Quality Act (CEQA) where it supports populations of sensitive species. The chaparral community present within the Planning Area is mixed chaparral comprised of hard-leaved, evergreen shrubs. Characteristic floral species include chamise (*Adenostoma fasciculatum*), scrub oak (*Quercus dumosa*), laurel sumac (*Rhus laurina*), black sage

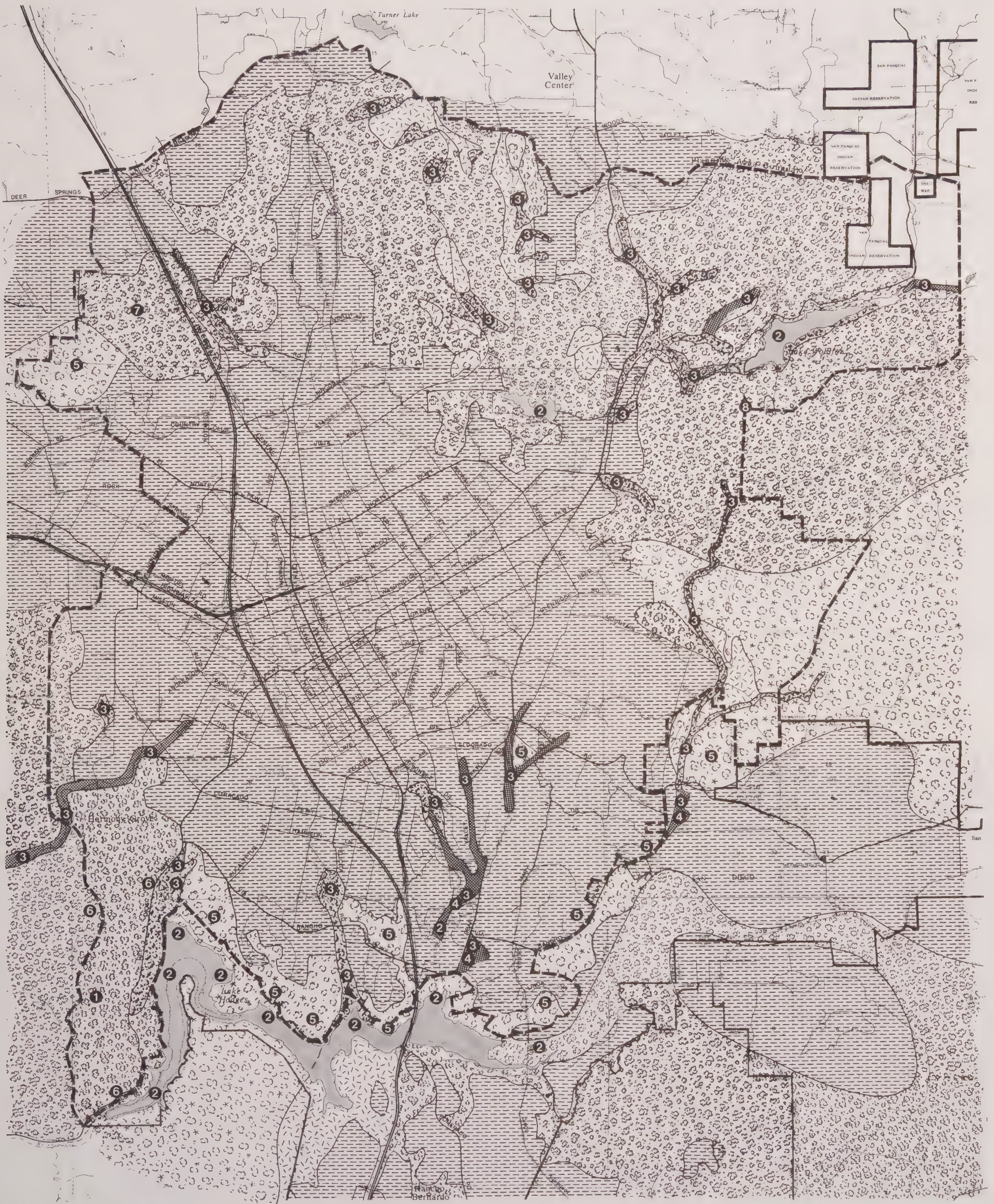
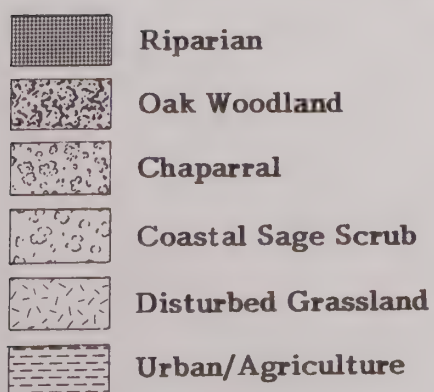


Figure V-1 BIOLOGICAL RESOURCES

GENERALIZED VEGETATIVE HABITATS:



① Important Wildlife Feature
(for Reference to Numbers, see Table V-1)

Source: WESTEC Services

Table V-1: IMPORTANT WILDLIFE FEATURES OF THE ESCONDIDO PLANNING AREA*

1. (large circle) A sensitive wildlife resource exists in this area. Specific information is on file with the Planning Department.
2. Habitat for sensitive waterfowl and water-associated wildlife.
3. Habitat for sensitive riparian/oak woodland wildlife.
4. Potential least Bell's vireo habitat (endangered species).
5. Black-tailed Gnatcatcher and/or Cactus Wren habitat.
6. Sensitive chaparral habitat with endangered Encinitas Baccharis and Wart-Stemmed Ceanothus.
7. Sensitive chaparral habitat with endangered Parry's Tetracoccus and other plant species.
8. Southern limit of Huckleberry in the U.S.

*Cross-reference to Figure V-1.

Table V-2: LIST OF POTENTIALLY-OCCURRING SENSITIVE PLANT SPECIES IN THE ESCONDIDO PLANNING AREA

Plants Rare and Endangered in California and Elsewhere

<u>Species</u>	<u>Notes</u>
<i>Acanthomintha ilicifolia</i> San Diego Thornmint	This annual plant has several occurrences south and west of Escondido. It grows in clay soils, is difficult to detect and is endangered.
<i>Ambrosia pumila</i> San Diego Ragweed	Historic records exist for this rare perennial herb in central Escondido. It may be extirpated.
<i>Baccharis vanessae</i> Encinitas Baccharis	This rare local shrub was recently found in the Mt. Israel area west of Del Dios.
<i>Caulanthus stenocarpus</i> Slender-pod Caulanthus	This annual plant was recorded for the "Bernardo" area in 1903 and may occur in the Planning Area.
<i>Dudleya viscida</i> Sticky Dudleya	This perennial occurs along Escondido and San Marcos creeks west of the Planning Area and could grow within that area.
<i>Horkelia truncata</i> Ramona Horkelia	This annual strawberry relative occurs on Rodriquez Mountain and may be found elsewhere in the Planning Area.
<i>Muilla clevelandii</i> Cleveland's Golden Star	This onion-like herb is found south and west of Escondido.
<i>Tetracoccus dioicus</i> Parry's Tetracoccus	This shrub is restricted to gabbro soils and may occur in steep, rocky areas of the Planning Area.

Plants Rare and Endangered in California but More Common Elsewhere

<i>Arctostaphylos peninsularis</i> Peninsular Manzanita	The bulk of this species' range is north of the San Luis Rey River, but some may occur in the Valley Center area.
<i>Artemisia palmeri</i> Palmer's Sagewort	This shrub is known from Del Dios and other riparian and oak woodland locales in the Planning Area.
<i>Ceanothus verrucosus</i> Wart-stemmed Ceanothus	This large shrub is common about Del Dios.
<i>Chamaebatia australis</i> Southern Mountain-Misery	This rose relative is confined to gabbro soils and may occur in the Planning Area.

Clarkia delicata
Campo Clarkia

This attractive wildflower occurs in the foothills near Escondido.

Ferocactus viridescens
San Diego Barrel Cactus

This cactus is unreported for the Planning Area, but could occur there.

Haplopappus junceus
Rush-like Bristleweed

This species reaches its northern limit in the Planning Area.

Iva hayesiana
San Diego Poverty-Weed

This riparian shrub is known west of the Planning Area and may occur rarely within that area.

Plants of Limited Distribution - A Watch List

Monardella hypoleuca ssp. *lanata*
Felt-leaved Rockmint

This rare mint is found on rocky slopes of the vicinity.

Ophioglossum lusitanicum ssp. *californicum*
California Adder's Tongue Fern

This ephemeral fern is recorded from Escondido.

Polygala cornuta var. *fishiae*
Fish's Milkwort

This unusual shrub occurs on gabbro soils north of the area and may occur within the Planning Area.

Satureja chandleri
San Miguel Savory

This attractive mint occurs on gabbro soils near the Planning Area.

Table V-3: List of Potentially-Occurring High Interest Bird Species, Listed by Habitat Preference or Attraction

Scientific Name	Common Name	Federal ¹	State ²	Remsen ³	Everett ⁴	Tate and Tate ⁵
UPLAND						
<u>Circus cyaneus</u>	Northern Harrier	—	—	2nd Priority	Declining	Blue-listed
<u>Accipiter cooperi</u>	Cooper's Hawk	—	CSC	—	—	Special Concern
<u>Accipiter striatus</u>	Sharp-shinned Hawk	—	—	3rd Priority	—	Blue-listed
<u>Aquila chrysaetos</u>	Golden Eagle	—	Fully Protected	3rd Priority	—	—
<u>Cathartes aura</u>	Turkey Vulture	—	—	—	Declining	Special Concern
<u>Falco columbarius</u>	Merlin	—	—	—	—	—
<u>Falco sparverius</u>	American Kestrel	—	—	—	—	Blue-listed
<u>Falco mexicanus</u>	Prairie Falcon	—	—	3rd Priority	—	—
<u>Falco peregrinus</u>	Peregrine Falcon	E	E	—	—	—
<u>Athene cunicularia</u>	Burrowing Owl	—	CSC	2nd Priority	Declining	Special Concern
<u>Tyto alba</u>	Barn Owl	—	—	—	—	Special Concern
<u>Otus asio</u>	Western Screech Owl	—	—	—	—	Special Concern
<u>Poliophtila melanura californica</u>	Black-tailed Gnatcatcher	Cat. 2	CSC	2nd Priority	Declining	Special Concern
<u>Poliophtila caerulea</u>	Blue-gray Gnatcatcher	—	—	—	Declining	—
<u>Lanius ludovicianus</u>	Loggerhead Shrike	—	—	—	—	Blue-listed
<u>Guiraca caerulea</u>	Blue Grosbeak	—	—	—	—	—
<u>Campylorhynchus brunnei-capillum</u>	Cactus Wren	—	—	—	—	—
<u>Ammodramus savannarum</u>	Grasshopper Sparrow	—	—	—	Sensitive	Blue-listed
RIPARIAN						
<u>Elanus caeruleus</u>	Black-shouldered Kite	—	Fully-Protected	—	—	—
<u>Buteo lineatus</u>	Red-shouldered Hawk	—	—	—	—	Blue-listed
<u>Accipiter cooperii</u>	Cooper's Hawk	—	—	2nd Priority	Declining	Special Concern
<u>Asio otus</u>	Long-eared Owl	—	CSC	2nd Priority	Declining	—
<u>Empidonax traillii</u>	Willow Flycatcher	—	CSC	Highest	Declining Priority	Blue-listed
<u>Catharus ustulatus</u>	Swainson's Thrush	—	—	—	—	—
<u>Vireo bellii pusillus</u>	Least Bell's Vireo	Endangered	Endangered	Highest Priority	Threatened	Blue-listed
<u>Vireo gilvus</u>	Warbling Vireo	Endangered	—	—	Declining	Local Problem Species
<u>Dendroica petechia</u>	Yellow Warbler	—	—	2nd Priority	Declining	Blue-listed
<u>Icteria virens</u>	Yellow-breasted Chat	—	—	2nd Priority	Declining	Local Problem Species
<u>Picoides pubescens</u>	Downy Woodpecker	—	—	—	Declining	—
<u>Coccyzus americanus occidentalis</u>	California Yellow-billed Cuckoo	Cat. 2	Threatened	—	Threatened	Special Concern
FRESHWATER MARSH/AQUATIC						
<u>Gavia immer</u>	Common Loon	—	CSC	—	—	Special Concern
<u>Aechmophorus occidentalis</u>	Western Grebe	—	CSC	—	—	Blue-listed
<u>Phalacrocorax auritus</u>	Double-crested Cormorant	—	CSC	—	—	Special Concern
<u>Ardea herodias</u>	Great Blue Heron	—	—	—	Sensitive	Special Concern
<u>Butorides striatus</u>	Green-backed Heron	—	—	—	Declining	Local Problem
<u>Ixobrychus exilis</u>	Least Bittern	—	CSC	—	—	—
<u>Nycticorax nycticorax</u>	Black-crowned Night Heron	—	—	—	Sensitive	Special Concern
<u>Pandion haliaetus</u>	Osprey	—	CSC	—	—	Special Concern

1. U.S. Fish and Wildlife Service (1985b)

Endangered: Any species which is in danger of extinction throughout all or a significant portion of its range, other than a species of Class Insecta determined by the Secretary to constitute a pest whose protection under the provisions of this Act would present an overwhelming and overriding risk to man.

Threatened: Any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

2. California Department of Fish and Game (1980, 1982)

Endangered: Continued existence is jeopardized by one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition or disease.

Rare: Although not presently threatened with extinction, are in such small numbers throughout their range that they may become endangered if their environments worsen.

CSC: Species of Special Concern

3. Remsen (1978): Statewide listing under authority of California Department of Fish and Game

Highest Priority: Species faces immediate extirpation of its entire California population or its California breeding population if current trends continue. In several cases extirpation as a breeding species has already occurred.

Second Priority: Species is on the decline in a large portion of its California range, but its overall populations are still sufficiently substantial that danger is not immediate.

Third Priority: Species is not in any present danger of extirpation and its population within most of their range do not appear to be declining seriously; however, simply by virtue of its small populations in California, it is vulnerable to extirpation should a threat materialize.

4. Everett (1979): San Diego County listing for San Diego Audubon Society

Threatened: Species or subspecies which have undergone dramatic, non-cyclical, long-term populations declines, to the point where the situation has reached the critical level throughout their range. Most of these species have been recognized and protected by State and Federal legislation.

Declining: Species whose local breeding populations have been steadily reduced, or in some cases extirpated. Some of the species in this category are still common in migration, or as winter visitors. Habitat essential for breeding and foraging should be considered highly sensitive.

Sensitive: Species for which declines have not been documented, but are regarded as such because of: (a) extremely localized or limited distribution, (b) sensitivity to disturbance, (c) actual or impending destruction of essential habitat, or (d) lack of sufficient data on current or past status which significantly increased the potential for serious reduction on a local population.

5. Tate and Tate (1982): National listing for Audubon Society

Blue-listed: Species shows clear recent signs of population decline in all or a major portion of its range. The possible decline has been confirmed as well as possible through evaluations of systematic observations.

Species with Special Concerns: Species that appear to be recovering from a past decline.

Local Problem Species: Species for which a population decline cannot be confirmed and which does not occupy a large contiguous area.

Table V-4: High Interest Amphibian, Reptile, and Mammal Species Expected Within the Planning Area Boundaries

Species	Status ¹	Notes
<u>Amphibians</u>		
<u>Bufo microscaphus californicus</u> Arroyo Toad	CDFG: Species of Spec. Concern SDHS: Stable	Species prefers sandy arroyos and river bottoms in inland valleys and foothills, and coastal regional. May occur onsite.
<u>Rana aurora draytoni</u> Red-legged Frog	CDFG: Species of Spec. Concern SDHS: Status Underdetermined	May occur in permanent water habitats, but depleted.
<u>Hyla cadaverina</u> California treefrog	SDHS: Stable	Relatively uncommon. Prefers rapidly flowing streams in rocky canyons.
<u>Fish</u>		
<u>Gila oreutti</u> Arroyo Chub		Only native fish expected in the study area.
<u>Reptiles</u>		
<u>Clemmys marmorata pallida</u> Southwestern Pond Turtle	USFWS: Category 2 SDHS: Threatened (3)	Only turtle native to San Diego County. Restricted to permanent water sources. Potentially occurring onsite.
<u>Phrynosoma coronatum blainvillei</u> San Diego Horned Lizard	USFWS: Under status review (1) CDFG: Depleted (2) SDHS: Endangered (3)	In the San Diego area species occurs principally on low elevation open deciduous scrub and chaparral flatlands. Reported from the Escondido area.
<u>Cnemidophorus hyperythrus beldingi</u> Orange-throated Whiptail	USFWS: Under status review (1) CDFG: Rare (unofficial) (2) SDHS: Threatened (3)	Species occurs principally on the coastal plain and lower foothills on hillsides, wash bottoms, and mesas where the brush is more open. Species has been reported from the Escondido area and is expected in brush covered uplands.
<u>Aniella pulchra pulchra</u> Silvery Legless Lizard	SDHS: Threatened (3)	May occur in highly localized populations near drainages.
<u>Lichanura trivirgata roseofusca</u> Coastal Rosy Boa	CDFG: Protected (4)	Widespread in County in dry, rocky chaparral and desert habitats, usually near intermittent streams.
<u>Thamnophis couchi hammondi</u> Two-striped Garter Snake	CDFG: Depleted (2) SDHS: Threatened (3)	Species associated with aquatic and semi-aquatic habitats. Reported from general area. Species to be expected within riparian habitats and along the intermittent tributary drainages.
<u>Coleonyx variegatus abbotti</u> Coastal Banded Gecko	SDHS: Threatened (3)	Field data for species is scarce but the animal appears to be associated with rocky substrates on hillsides and outwash plains, particularly where granitic boulders are present. May occur at higher elevations within study area.

Table V-4: High Interest Amphibian, Reptile, and Mammal Species Expected Within the Planning Area Boundaries
(Continued)

Species	Status ¹	Notes
<u>Mammals</u>		
<u>Myotis lucifugus occultus</u> Occult Bat	CDFG: Species of Spec. Concern	Southern California vagrant, single specimen taken at Lake Hodges Dam in 1943. Forested areas.
<u>Plecotus townsendi pallescens</u> Pale Big-eared Bat	CDFG: Species of Spec. Concern	A cave-dweller, occasionally in attics and barns. Common in Escondido and the surrounding area.
<u>Tadarida femorosacca</u> Pocketed Free-tailed Bat	CDFG: Species of Spec. Concern	Observed in Borrego, could occur in Escondido.
<u>Tadarida Macrotis</u> Big Free-tailed Bat	CDFG: Species of Spec. Concern	Rare vagrant known from three specimens collected in San Diego.
<u>Bassariscus astutus</u> Ringtail	CDFG: Fully protected (4)	Secretive species associated with rocky slopes near water. Potentially occurring onsite in less developed areas.
<u>Felis concolor</u> Mountain Lion	CDFG: Formerly protected, hunting season under review	Species reported from the region, mostly expected at eastern periphery.
<u>Felis rufus</u> Bobcat	None	Species is of concern due to increase in trapping pressures. Relatively common in brushland habitat in San Diego County.
<u>Taxidea taxus</u> American Badger	CDFG: Special Concern	Poorly known distribution but certainly depleted in study area.

1. Status

1. McGurty (1981)
2. Bury (1971)
3. San Diego Herpetological Society (1980a,b)
4. California Department of Fish and Game (1985)

(*Salvia mellifera*), toyon (*Heteromeles arbutifolia*), and California lilac (*Ceanothus* spp.). Common faunal species include brush rabbit (*Sylvilagus bachmani*), coyote (*Canis latrans*), dusky-footed woodrat (*Neotoma fuscipes*), numerous native mice, agile kangaroo rat (*Dipodomys agilis*), red-tailed hawk (*Buteo jamaicensis*), California quail (*Callipepla californica*), Pacific rattlesnake (*Crotalus viridis*), San Diego gopher snake (*Pituophis melanoleucus annectens*), and California side-blotched lizard (*Uta stansburiana*).

Coastal Sage Scrub. Coastal sage scrub is a vegetation type which grows on rather dry slopes, and dominant species are relatively shallow-rooted shrubs, seldom over 4 feet tall. Characteristic shrubs include California buckwheat (*Eriogonum fasciculatum*), California sagebrush (*Artemisia californica*), deerweed (*Lotus scoparius*), black sage, and coyote bush (*Baccharis pilularis* ssp. *consanguinea*). Common animals include wrentit (*Chamaea fasciata*), brown towhee (*Pipilo fuscus*), greater roadrunner (*Geococcyx californianus*), California thrasher (*Toxostoma redivivum*), common bushtit (*Psaltiriparus minimus*), coyote, desert cottontail (*Sylvilagus audubonii*), pocket mouse (*Perognathus* sp.), striped racer (*Masticophis flagellum*), California side-blotched lizard, and Great Basin fence lizard.

Coastal sage scrub habitat in southern California is decreasing rapidly as a result of urbanization. San Diego County considers this a sensitive habitat, and evidence of its decline is the growing number of declining plant and animal species often associated with it. In Escondido, the sensitive species observed in coastal sage scrub habitat include California black-tailed gnatcatcher (*Polioptila melanura californica*), cactus wren (*Campylorhynchus brunneicapillum*), San Diego horned lizard (*Phrynosoma coronatum blainvillei*), and orange-throated whiptail (*Cnemidophorus hyperythrus beldingi*). The primary high-quality areas for this habitat are in the southern portion of the planning area, on south-facing slopes along the San Dieguito River Valley.

Disturbed Grassland. The disturbed grassland is a heterogeneous complex that may be associated with shrubs or trees on land that has been disturbed or altered by machine or fire. Non-native vegetation is common in this habitat and includes slender wild oats (*Avena barbata*), foxtail fescue (*Festuca megalura*), ripgut grass (*Bromus diandrus*), perennial mustard (*Brassica geniculata*), white-stem filaree (*Erodium cicutarium*), and pin-clover (*Erodium botrys*). No sizeable expanses of native grassland remain in the City vicinity. Birds of prey (raptors) forage over grassland areas, and locally breeding raptor species include black-shouldered kite (*Elanus caeruleus*), red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), red-shouldered hawk (*Buteo lineatus*), great-horned owl (*Bubo virginianus*), and barn owl (*Tyto alba*). Other grassland faunal associates include house mouse (*Mus musculus*), southern grasshopper mouse (*Onychomys torridus*), San Diego gopher snake, and Coronado Island skink (*Eumeces skiltonianus interparietalis*).

Oak Woodland. Oak woodland in Escondido ranges from more or less isolated trees or clumps of trees, through woodland areas with a discontinuous canopy, to stands on north slopes and canyon bottoms where a closed canopy has developed. Oak woodland may be dominated by either coast live oak (*Quercus agrifolia*), or on drier slopes by Engelmann oak (*Quercus engelmannii*). Only isolated pockets of coast live oak occur within the Escondido planning area boundary, confined to areas with ample, consistent soil moisture. The more open Engelmann oak woodlands characterize Rancho Guejito and areas near Lake Wohlford and Valley Center.

If the canopy is more open, an undergrowth of herbaceous plants may develop. In areas disturbed by grazing, ripgut grass, horehound (*Marrubium vulgare*), and hedge mustard (*Sisymbrium officinale*) grow beneath the oaks. Shrubs can become established where there is more light, particularly along the margins of this community.

The oak woodland constitutes a valuable wildlife habitat. The moist, protected nature of the woodland is ideal for amphibians. Among the amphibians likely to be found are the California slender salamander (*Batrachoseps attenuatus*) and arboreal salamander (*Aneides lugubris*). Reptiles occurring here include the Great Basin fence lizard, San Diego alligator lizard (*Gerrhonotus multicarinatus webbii*), and California Kingsnake (*Lampropeltis getulus californiae*). Smaller birds common in the oak woodland include the scrub jay (*Aphelocoma coerulescens*), acorn woodpecker (*Melanerpes formicivorus*), common flicker (*Colaptes auratus*), and the yellow-rumped warbler (*Dendroica coronata*). The red-shouldered hawk, Cooper's hawk, black-shouldered kite, and red-tailed hawk are all raptors that nest in oak woodlands.

Some of the mammals found in oak woodlands include Botta's pocket gopher, racoon (*Procyon lotor*), California pocket mouse (*Perognathus californicus*), and striped skunk (*Mephitis mephitis*).

Riparian/Wetland. Riparian/wetland habitats in southern California support a number of endangered, sensitive, or declining species of local, regional, and national concern, and are normally considered significant in the planning process. These areas also enrich species diversity in their vicinity. The naturally limited occurrence of this habitat also increases its intrinsic value. In San Diego County, riparian and wetland areas are recognized as sensitive. Riparian and wetland habitats are further subject to state and federal regulations that include the Federal Clean Water Act (Section 404) and the California Department of Fish and Game Streamcourse Alteration Agreement.

A number of stream channels flow through the land surrounding Escondido and the presence of water provides a favorable habitat and promotes increased plant growth of a variety of native trees, shrubs, and herbs. Where water is present near the surface in stream channels year-round, a riparian woodland community can be maintained. In stream channels with intermittent surface or ground water availability, a riparian scrub community may develop.

Dominant woodland tree species include arroyo willow (*Salix lasiolepis*) and black willow (*Salix gooddingii*) with common associates of California sycamore (*Platanus racemosa*) and Fremont cottonwood (*Populus fremontii*). Common scrubs include mulefat (*Baccharis glutinosa*), California mugwort (*Artemisia douglasiana*), poison-oak (*Toxicodendron diversilobum*) and tree tobacco (*Nicotiana glauca*).

Common riparian animals include red-winged blackbird (*Agelaius phoeniceus*), song sparrow (*Melospiza melodia*), black phoebe (*Sayornis nigricans*), Anna's hummingbird (*Calypte anna*), western flycatcher (*Empidonax difficilis*), raccoon, and California mole (*Microtus californicus*). Riparian areas also serve as important habitat for deer, and watering and movement routes for wildlife.

Lake Wohlford, Dixon Reservoir, Lake Hodges, and smaller bodies of water found around Escondido are managed aquatic habitats that support vegetative and amphibian species similar to riparian areas; they also have their own unique assortment of wading birds and waterfowl.

3. HABITAT OCCURRENCE WITHIN THE ESCONDIDO PLANNING AREA

City Limits. The degree of urbanization within the City area has nearly eliminated sizeable expanses of undisturbed native vegetation. Isolated pockets of chaparral and coastal sage scrub vegetation occur among residential and commercial developments; most of these islands of vegetation are affected by human use. The lack of large mesic areas or well-developed woodland habitats within the City further limits the use of the urban area by wildlife. However, in less developed areas, e.g., near the Del Dios area in the south, Harmony Grove in the southwest, and

much of the southeast portion of Escondido, a semi-rural environment exists adjacent to undisturbed habitat. Most wildlife occurs within these areas of low development.

Protected habitat in parks, i.e., Kit Carson Park and Felicita Park in the southern area, supports diverse native floral and faunal species. In particular, the riparian woodland within Kit Carson park may support the endangered least Bell's vireo and the rare California yellow-billed cuckoo, along with the sensitive California black-tailed gnatcatcher, northern harrier, Cooper's hawk, and American kestrel.

Southwestern. Coastal sage scrub is predominant among the generally lower elevations and more gentle slopes that occur in the southwestern portion of the study area, particularly along the shore of Lake Hodges. Several tributaries to Lake Hodges influence the southern portion of the City and account for the higher diversity of wildlife found in this vicinity. Valuable oak groves occur along several of the streams, such as along Lake Drive. On the steep hillsides west of Del Dios Highway, nesting sites of the turkey vulture and the sensitive golden eagle (*Aquila chrysaetos*) can be found. Several sensitive plant species, i.e., wart-stemmed ceanothus, Palmer sagewort, sticky dudleya, and Encinitas baccharis, occur in the Rancho Cielo/Del Dios vicinity. The Encinitas baccharis population occurs at the fringe of the planning area. This plant is listed as endangered and the local population is one of the largest remaining.

Eastern. The eastern border of the City is developed predominantly for agriculture with low density housing around the Interland/Cloverdale area. Open expanses of coastal sage scrub become more predominant in the eastern end of the planning area and floral species considered of limited distribution that occur here include golden ear-drops, bushrue, and Cleveland sage. Rock outcrops, valuable as nesting habitat for raptors, are common in the eastern periphery. The sensitive California black-tailed gnatcatcher, orange-throated whiptail, and San Diego horned lizard are likely residents in coastal sage scrub in this area. A few stands of oaks and riparian habitat occur near the stream channels, providing habitat variety, an increase in the local floral and faunal diversity, migration routes, and essential habitat to amphibians and a number of birds. The endangered least Bell's vireo has nested in the San Pasqual Valley near the Planning Area boundary.

Northeastern. The northeastern portion of the study area is predominantly higher elevation chaparral growing on steeply-inclined hillsides. Rock outcrops are also common throughout much of this area and only limited agriculture has extended into the open space that still remains here. Lake Wohlford, Dixon Reservoir, and their associated tributaries influence the surrounding habitat and provide habitat for waterbirds and osprey. The southern shore of Lake Wohlford supports oak woodland habitat that continues along much of Lake Wohlford Road and occurs along the deeper canyons with near-perennial surface water. The Bear Ridge area has dense chaparral and some fine stands of Engelmann oak.

Northern. Agriculture and scattered development dominate the area north of the City limits through the Jesmond Dene area; however, scattered areas of coastal sage scrub and chaparral also occur here. A County of San Diego designated Resource Conservation Area centers on the coast live oaks that grow along Jesmond Dene Road. Both chaparral and coastal sage scrub are more predominant east of Broadway in the Daley Ranch area. Rare and endangered plants observed in this area include slender-pod caulanthus (*Caulanthus stenocarpus*) and San Diego goldenstar (*Muilla clevelandii*). The Palos Vista area in the northwest is mostly chaparral; however, an unusual soil type here supports a large population of the sensitive plant, Parry's tetracoccus (*Tetracoccus dioicus*). Also occurring here is summer-holly (*Comarostaphylis diversifolia* ssp. *diversifolia*) which has a limited distribution in California. Sensitive faunal species in this area include Cooper's hawk, turkey vulture, and large mammals such as mountain lion and mule deer.

Important Biological Areas. The varied canyons that occur throughout parts of the Escondido planning area boundary are important biologically because of the increased diversity of floral and faunal species that are supported here. The canyons west of Lake Wohlford, in the Daley Ranch area, in Del Dios along Lake Drive, in Kit Carson Park, along Marten Creek, and throughout the corridor leading from Lake Hodges to Felicita Park are all important habitats within the study area. The perennial surface water that is maintained in these canyons supports riparian and oak woodland flora that provide nesting habitat, protection, and critical resources for the fauna that visit or reside here.

Other areas are important biologically, as they support flora or fauna that are limited in their distribution, or require or tolerate unusual conditions that occur there. For instance, areas of unusual soil types often support a different floral complement because one species that grows there either requires the unusual soil, or much of the surrounding common flora cannot survive as well on the unusual substrate. In the Palos Vista area, west of Jesmond Dene, the occurrence of the unusual gabbro soil coincides with a sizeable population of the Parry's tetracoccus (*Tetracoccus dioicus*). Other rare plant species may occur in this area or in the few other outcrops of this soil type in the area. Another sensitive area occurs on the southern slopes of Lake Hodges where there grows a healthy stand of coastal sage scrub including western prickly-pear (*Opuntia occidentalis*). This habitat supports the sensitive cactus wren as well as the California black-tailed gnatcatcher.

The University of California Natural Land and Water Reserves System manages the Ryan Oak Glen area, near Bear Valley and Lake Wohlford Road, as a reserve. The oaks, chaparral, and abundant seeps and springs on this property are protected and available for study and research. The County of San Diego has also designated a number of Resource Conservation Areas (RCA) within the Planning Area. The oak woodlands and intermixed old growth chaparral around Burnt Mountain within the Daley Ranch are protected resources here and acknowledged as good wildlife habitat, and a visual landmark. Valley Center Ridge to the east of Burnt Mountain, is noted for the scenic, steep ridge and the oak woodlands and large growth chaparral. Similarly, the Jesmond Dene oaks, in the southeast area, and the East Escondido oaks are both considered to enhance habitat among the surrounding urban and agricultural development. Finally, the area surrounding the San Dieguito River and Lake Hodges is influenced by the aquatic habitats which affect the southern portion of the study area.

B. TOPOGRAPHY, GEOLOGY, AND SOILS

1. TOPOGRAPHY

The Escondido General Plan area is located in the foothills subprovince of the Peninsular Ranges Geomorphic Province. The Peninsular Ranges Province is primarily a region of northwest-southwest trending structural blocks separated by major regional faults. These faults are active branches of the San Andreas system and include the San Jacinto and Elsinore fault zones. The Escondido area lies west of these major regional faults and mountain ranges in an area transitional between the coastal plain to the west and granitic highlands to the east.

Site-specific topography includes a series of low, rugged hills which are gradational to broad valleys lying west, south, and northeast. These relatively flat-lying valleys incorporate much of the existing urban development in the planning area and include Escondido Valley as well as portions of Twin Oaks, San Pasqual, and Woods valleys. Most of the more rugged topography is located in the northern and western sections of the planning area, including portions of the Merriam Mountains, Oat Hills, Burnt Mountain, Battle Peak, Bear Ridge, and Paradise Mountain. Local highlands consist of low, rugged hills exposing primarily granitic and metamorphic rocks. These landforms display a number of steep, rocky ridgelines, many of which abut level terrain and display prominent topographic features. The majority of these ridges trend north to northwest and

are separated by a series of small finger canyons and valleys. Due to the primarily granitic nature of local highlands, their weathered appearance consists generally of light-colored, rounded boulders and outcrops. Onsite elevations range from over 2400 feet above mean sea level (MSL) along eastern Bear Ridge, to approximately 350 feet MSL in southern Escondido Valley near Lake Hodges. Additional onsite hills peak at 1762 feet (Merriam Mountains), 2135 feet (Burnt Mountain), 2139 feet (Battle Peak), and 1150 feet MSL (Bernardo Mountain).

The planning area is cut by a number of perennial and ephemeral drainages, with local runoff controlled by topography and moving in various directions. Eventual drainage from the planning area is to the west and southwest, and is contained within 3 separate drainage basins. The largest of these includes Escondido Creek, the primary drainage channel in the project area. A more detailed discussion of planning area hydrology is contained in Section V.C of this report.

2. GEOLOGY

The Escondido Planning Area is located within a tectonically active region known as the Cordilleran Mountain system. This area stretches from Alaska to South America, and represents the boundaries between several major crustal plates. Changing plate movements over geologic time have resulted in variable tectonic activities along the southern California coast, including compressional, extensional, and strike-slip (lateral) movement. This activity has resulted in a variety of geologic events, ranging from stable shallow marine sedimentary deposition to epeirogenic (broad, non-folding or faulting) movement to cataclysmic igneous intrusion and volcanism. The Escondido area lies between the Pacific Ocean and Americas plates, in the Western Ranges belt of the Cordillera. This belt is generally characterized by batholithic intrusion, metamorphosed geosynclinal rocks, volcanism, and high relief (Stearn, Carroll, and Clark 1979).

The Escondido region was likely subject to marine and volcanic geosynclinal deposition throughout much of the Paleozoic era (see Table V-5 which displays the geologic time scale). Geosyncline deposits result from the subsidence of a normally linear trough or basin, and the concurrent accumulation of marine, volcanic, and/or clastic sediments. Thick deposits of Paleozoic geosynclinal rocks occur in much of the Cordillera, although such deposits are absent in the Escondido region. This is likely due to subsequent igneous intrusion, regional uplift, and erosion, which have removed the Paleozoic rock and created a broad unconformity. During the Mesozoic era, uplift and mountain building culminated in the Cordilleran orogeny, with continued local volcanic and geosynclinal deposition. Igneous rocks associated with the southern California batholith were intruded during the mid and late Mesozoic. Batholithic rocks were emplaced as a number of distinct units, with each likely intruded subsequent to crystallization of the preceding unit (California Division of Mines and Geology 1963). The sequence of intrusion for batholithic rocks ranged chronologically from basic (gabbro) to acidic (granite) igneous rocks, with a number of intermediate types including quartz diorite and granodiorite. Uplift and erosion continued throughout the remainder of the Mesozoic era, resulting in the wide-spread exposure of batholithic rocks in the Escondido region, and the creation of a high elevation erosion surface. Beginning around the middle Cretaceous, strike-slip movement along a proto-San Andreas fault began to shift peninsular California northward with respect to the continental craton (or stable mass). This movement has continued through the present along the contemporary San Andreas fault, at rates between 2 and 5 cm/yr (Crowell 1975, Abbott 1982). The beginning of the Cenozoic era marked renewed deposition within coastal basins, with thick accumulations of Tertiary marine strata present in many coastal areas. Tertiary rocks are absent in the Escondido area, however, as the presence (and continued uplift and erosion) of regional granitic highlands precluded most deposition. This position has persisted into the Quaternary period, although localized deposition has occurred within the Escondido Planning Area in the form of nonmarine alluvial fan and stream terrace sediments. Regional unconformities exist in the project area vicinity, with Quaternary sediments commonly overlying Cretaceous or older rocks.

Table V-5: Geologic Time Scale

Eras	Periods	Epochs	Years Before Present
Cenozoic	Quaternary	Holocene	0.011
		Pleistocene	2.3
	Tertiary	Pliocene	7
		Miocene	26
		Oligocene	38
		Eocene	53
		Paleocene	63
			63
Mesozoic	Cretaceous		135
	Jurassic		180
	Triassic		230
Paleozoic	Permian		280
	Pennsylvanian		310
	Mississippian		345
	Devonian		405
	Silurian		425
	Ordovician		500
	Cambrian		600
Archaeozoic	Precambrian		

(millions of years)

Surface exposures in the project area include rocks ranging from Mesozoic to Quaternary in age (Figure V-2). Following is a description of these geologic units in order of increasing age.

Alluvium (Qal). Quaternary alluvium consists of stream channel, alluvial fan, slopewash, and valley fill deposits derived from bedrock within and east of the site. These materials were deposited chiefly by the action of running water and gravity, and consist generally of unconsolidated to poorly consolidated, poorly to well sorted silt, sand, gravel, and clay. Alluvial deposits are located primarily within drainage floodplains and along the flanks of lower valley slopes, although decomposed granite and talus can be locally abundant on highland slopes and mesas. Quaternary alluvium comprises the parent material for and is transitional to a number of soil types in the project site. A specific discussion of local soil associations is presented later in this section.

Quaternary Nonmarine Terrace Deposits (Qt). These units consist of local stream terrace deposits associated with remnant stream channels. Terrace deposits are normally located in areas segregated from current stream channels, due to the horizontal or vertical (downcutting) movement of these drainages. Thus, stream terrace deposits often consist of alluvial materials located on slopes above and/or horizontally distant from current drainages. Nonmarine terrace deposits display typical clastic stream lithology, including generally poorly consolidated sandstones and conglomerates. Terrace materials are often highly dissected due to their location relative to local slopes and runoff, and reddish-brown in color as a result of iron content and oxidation.

Pleistocene Nonmarine Sedimentary Deposits (Qc). Pleistocene (or early Quaternary) nonmarine sedimentary deposits consist predominantly of undeformed or slightly deformed dissected alluvial fan deposits. Locally, these include poorly sorted bouldery gravel, conglomerate, decomposed granite, and undifferentiated silts, sands, and gravels. All of these materials are normally coarse and angular, and can range from well-cemented to unconsolidated deposits.

Undifferentiated Cretaceous Granitic Rocks (Kgr). Undifferentiated granitic intrusives incorporate a variety of rocks including granite, quartz monzonite, quartz diorite, granodiorite, and diorite. Additionally, a number of minor intrusive units are present in the form of aplite, pegmatite, and some basic dikes and sills. Undifferentiated granitics generally have a light to medium gray, coarse-grained appearance, and weather to rounded decomposing boulders. These rocks can be of various ages from early to late Cretaceous.

Cretaceous Basic Intrusive Rocks (Kbi). These rocks consist primarily of coarse-grained, dark-colored gabbros (the San Marcos Gabbro), containing abundant hornblende and olivine. Gabbros are basic in composition, displaying a marked visual contrast to granitic (acid) rocks in both color and weathering pattern. They tend to stand out less in relief and display less of a bouldery appearance. Gabbros are the intrusive equivalent of basalt in composition and are generally assigned an age of early Cretaceous in the project vicinity. Additional rock types incorporated within this classification include peridotite and norite. Soils associated with these basic rocks are dark reddish brown in color.

Jurassic Metavolcanic Rocks (Jmv). These rocks include interbedded metavolcanic and volcanoclastic members of the Santiago Peak volcanics. The metavolcanics consist predominantly of dark-colored flows, tuff, breccia, and agglomerate. These units vary in composition from rhyolite to basalt, although andesitic porphyry is the most common rock type. Exposures normally exhibit hard, weather resistant surfaces, with silicate minerals slightly to completely altered. Most weathered surfaces are pale to reddish brown due to the presence of iron-bearing minerals, although in places these rocks include greenstones; metabasalts with a distinctive greenish color resulting from the presence of chlorite, hornblende, and epidote. The volcanoclastic units present include sandstones, mudstones, and conglomerates, concluded by Abbott (1982) to be derived

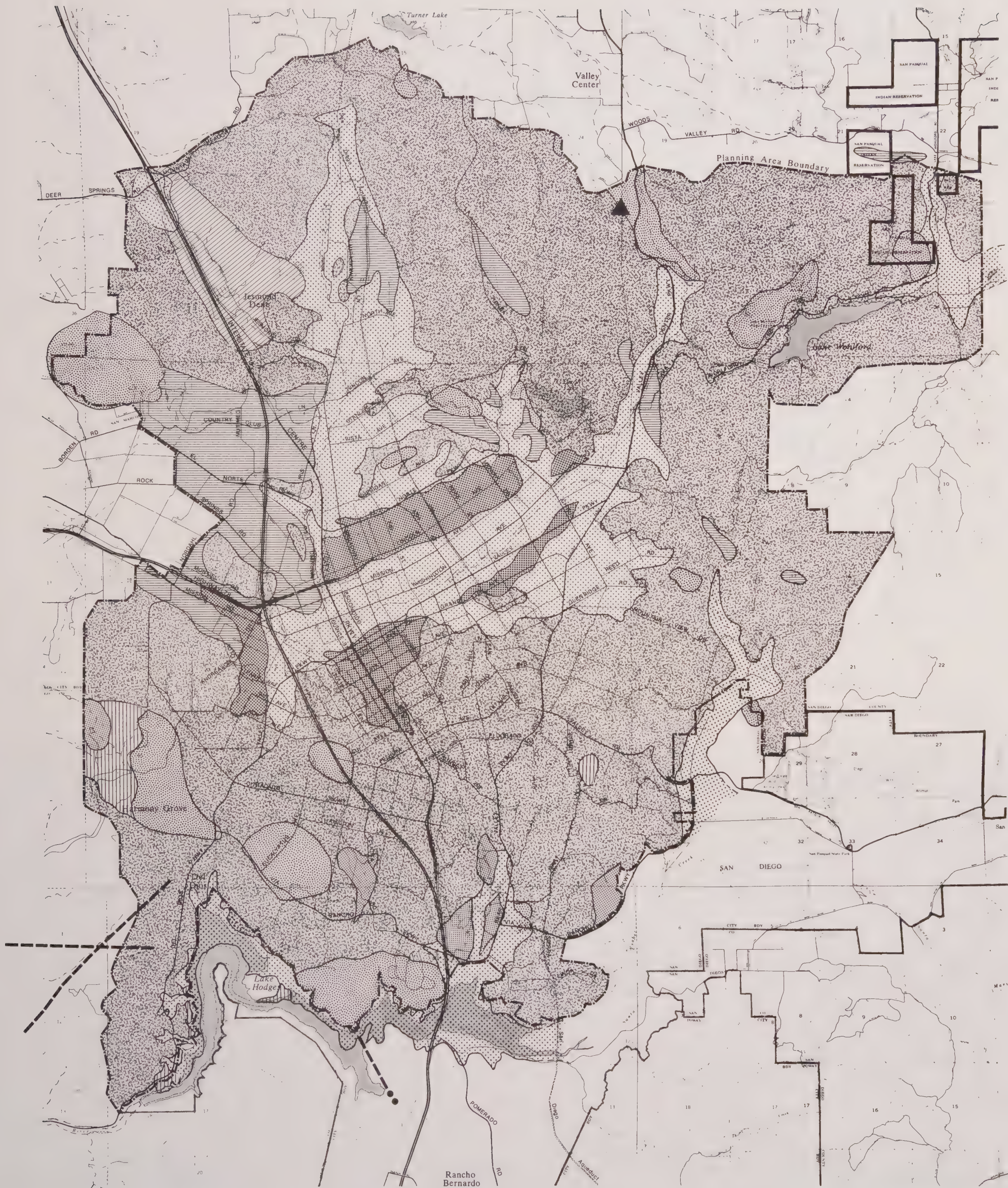


Figure V-2 GEOLOGY

-  Undifferentiated Quaternary Alluvium
-  Quaternary Nonmarine Terrace Deposits
-  Pleistocene Nonmarine Sedimentary Deposits
-  Undifferentiated Cretaceous Granitic Rocks
-  Cretaceous Basic Intrusive Rocks
-  Upper Jurassic Metavolcanic Rocks
-  Upper Jurassic Hypabyssal Intrusive Rocks
-  Jurassic and/or Triassic Marine Sedimentary and Metasedimentary Rocks

-  Landslides
-  Concealed Faults
-  Inferred Faults

Sources: Division of Mines & Geology, 1958-59, 1975; County of San Diego, 1975.

exclusively from volcanic members on the basis of textural immaturity and mineralogical equivalence. Metamorphic alteration in the Santiago Peak Volcanics is generally uniform and low-grade, although a slight eastward increase in metamorphic intensity exists. This metamorphism has been interpreted as predating the emplacement of the southern California batholith (Abbott 1982).

Upper Jurassic Hypabyssal Intrusive Rocks (Jg). Hypabyssal rocks are defined as having been upwelled as magma, but solidified mainly as minor intrusions such as dikes and sills prior to reaching the surface. Consequently, these rocks are crystallized under conditions intermediate between intrusive (plutonic) and extrusive (volcanic) classes. In the Escondido area, hypabyssal rocks are fine-grained and range in composition from granite to granodiorite porphyry, and their volcanic equivalents, rhyolite to dacite. These units are associated with the Santiago Peak Volcanics and are considered to be approximately the same age as that sequence.

Jurassic and/or Triassic Marine Sedimentary and Metasedimentary Rocks (Jm). Jurassic/Triassic marine strata are primarily metamorphic in the project vicinity and are designated as the Bedford Canyon Formation. These rocks are mapped as large roof pendants, although a number of smaller inclusions are likely present throughout the Cretaceous igneous exposures. In the project area the Bedford Canyon Formation consists predominantly of interbedded quartz-mica schist and quartzite, with additional local exposures likely, including mica schist, gneiss, amphibolite, and recrystallized carbonates. The grade of metamorphism within the Bedford Canyon formation generally increases to the east in San Diego County, with finer grained metamorphic rocks more abundant in the western regions, including the Escondido Planning Area. The age relationship between the metasedimentary rocks and the previously described metavolcanics is indefinite, as members of these two units are interbedded in a number of locations.

The major structural features of the Peninsular Ranges Geomorphic Province are a series of northwest-southeast trending fault zones, dominated by the San Jacinto and Elsinore systems. These are both related to the San Andreas fault and have exhibited recent activity. The San Jacinto fault runs along the western flank of the San Jacinto Mountains and lies approximately 40 miles northeast of the project site at its closest point. Total cumulative right-slip horizontal movement has been estimated to be as much as 15 miles, with this movement beginning as early as Pliocene and occurring primarily during Quaternary time (South Coast Geologic Society 1981). Right-slip (or right strike-slip) refers to movement which is horizontal and appears to offset the side of the fault opposite an observer to the right. No known vertical movement has occurred along the San Jacinto fault. Major historical earthquakes recorded along the San Jacinto fault zone include events greater than 6.0 Richter magnitude having been recorded within the last 70 years. The closest and most recent of these occurred in 1968, approximately 40 miles east of Escondido. This was a 6.3 Richter scale event along the Coyote Creek fault segment. The Elsinore and San Jacinto fault zones are essentially parallel, with the Elsinore located approximately 15 miles northeast of the Escondido Planning Area. Most of the individual faults within the Elsinore zone are on the order of 0.5 to 1.5 miles long, although several have been mapped continuously for up to 16 miles. Evidence of both strike-slip and dip-slip (vertical) movement has been observed along the Elsinore fault zone, with displacements of up to 3 miles horizontally and 110 feet vertically existing at various locations (Kennedy 1977). Historically, the Elsinore is relatively quiet compared to the San Andreas and San Jacinto zones. Approximately 60 earthquakes occurred along the Elsinore fault between 1932 and 1972, with five of these having Richter magnitudes of 4.0 or greater. The origin of activity along the Elsinore fault zone is unknown, although displacement has been observed in strata as old as Miocene.

Additional major faults in the region include the San Andreas fault zone, lying approximately 65 miles northeast of the Planning Area, and the Rose Canyon fault, roughly 20 miles to the southwest (Figure V-3). The San Andreas fault zone is active, having produced a number of historic major

Figure V-3 REGIONAL FAULT MAP
ESCONDIDO GENERAL PLAN PROGRAM

seismic events in southern California. The contemporary San Andreas fault is believed to have originated no later than Late Oligocene times, and to display approximately 200 miles of right lateral displacement (Crowell 1975). The Rose Canyon fault is considered potentially active, with no direct evidence of displacement in material younger than Pleistocene and an estimated recurrence interval ranging from 5000 to 20,000 years (Abbott 1982).

Potential onsite faulting is limited to a number of inferred fault traces in the southwestern portion of the project area. These projected faults, along with additional minor inferred and concealed fault traces in adjacent areas, do not exhibit any evidence of recent activity and are not considered to be active.

3. SOILS

The U.S. Soil Conservation Service (1973) has divided the San Diego soil survey area into four major physiographic provinces: the coastal plains, the foothills, the mountains, and the desert. These designations reflect differences in climate, soil types, topography, and land use, with the Escondido Planning Area located in the foothills province. The foothills incorporate a north-south trending belt of winding valleys, rolling hills, and rocky highlands at elevations up to approximately 2500 feet MSL.

Parent rocks include all of the previously described igneous, metamorphic and sedimentary units, with the abundance of individual soil types dependant on the occurrence of applicable source rocks. Granitic igneous intrusives are the most common parent rocks in the Escondido area, followed by metamorphic assemblages and basic igneous intrusives.

The San Diego soil survey area has been divided into approximately 70 soil series, each containing a number of soil types with similar physical and chemical characteristics. Soils in the Escondido Planning Area generally consist of well-drained, medium-to coarse-grained, often rocky sandy loams, commonly with clay loam substrata and underlying igneous and metamorphic bedrock. The Escondido area includes portions of 23 soil series; individual descriptions are provided below.

Acid Igneous Rock Land. Acid igneous rock land consists of rough, rocky terrain lying primarily in areas of steep topography. Boulders and outcrops of granitic rock comprise from 50 to 90 percent of surface exposures, with the intermediate material consisting of shallow loam to loamy coarse sand. Vegetation is generally sparse (although variable with elevation and climate) and includes such varieties as sumac, sugarbush, chamise, ceanothus, manzanita, and oak brush. Acid igneous rock land contains little or no value for agricultural uses, although it can be used for wildlife habitat and watershed. These soils are limited to relatively minor exposures in the northern portions of the Planning Area.

Arlington Series. Soils of the Arlington series are located on alluvial fans with slopes ranging from two to nine percent and elevations between 400 and 1100 feet MSL. This series consists of moderately well-drained and moderately deep coarse sandy loams underlain by weakly cemented granitic alluvium. Typical soil profiles extend approximately 60 inches below the surface, with acidity and consolidation increasing slightly with depth. Soils are generally moist and friable to depths of 26 to 40 inches, where a weakly cemented layer or substratum generally occurs. During wet periods a locally perched water table often forms above this horizon. Vegetation typically includes flattop buckwheat, filaree, wild oats, shrubs, and annual grasses and forbs. Arlington soils are utilized primarily for range, although small areas are cultivated for tomatoes, flowers, and truck crops. Exposures in the project area are limited to small acreages in the north- and east-central regions.

Auld Series. Auld series soils are located on uplands with slopes of 5 to 30 percent and elevations between 300 and 700 feet MSL. These consist of well-drained clays underlain by metavolcanic rocks. Soil profiles vary in thickness, with depths up to 60 inches occurring on gentler slopes, and steeper slopes on the order of 20 to 30 inches. Neutral pH conditions normally occur near the surface, with an increase to moderate alkalinity over depth. Soil moisture and texture are relatively consistent throughout the profile, with moist, sticky, and plastic conditions prevalent. Vegetation in uncultivated areas is chiefly wild oats, wildrye, star thistle, and scrub oak, while agricultural uses include range, grain, and tomatoes. Auld series soils are limited to minor exposures in the northwestern portion of the Planning Area.

Bonsall Series. Bonsall soils are found in concave slopes ranging from 2 to 15 percent, and elevations between 200 and 2500 feet MSL. This series consists of moderately well drained, shallow to moderately deep sandy loams with a heavy clay loam subsoil. Typical soil profiles extend to approximately 90 inches, with firm textures remaining relatively consistent and pH changing from slightly acidic to slightly alkaline conditions over depth. Deeply weathered granitic rocks usually occur below the soil profile and constitute the parent material. Native vegetation is primarily filaree, mustard, wild oats, and annual grasses and forbs, with a few scattered oaks along drainages. Bonsall soils are used mostly for range, although small acreages are cultivated for barley, citrus, tomatoes, and flowers. In the project area, Bonsall soils occur as a number of small exposures in the southwestern region.

Chino Series. Soils of the Chino series are found on alluvial fans and terraces. Slopes vary from 0 to 5 percent and elevations are between 20 and 2500 feet MSL. These soils consist of moderately well-drained interbedded fine sandy loams silt loams and clay loams. Soil profiles extend as deep as 72 inches, with high soil moisture and friable textures remaining constant, and pH increasing from slightly acidic to moderately alkaline conditions over depth. One soil type within this series exhibits saline conditions at the surface. Soil structure changes from granular and cohesionless over the upper 7 inches (A horizon), to blocky and slightly consolidated to a depth of 60 inches. Below 60 inches, Chino soils revert back to a granular, cohesionless structure. This series is derived primarily from weathered granitic alluvium. Vegetation is composed primarily of annual grasses and shrubs, with salt-tolerant plants present on the saline soils. Chino soils are used for grazing, truck crops, citrus, tomatoes, and flowers, and are limited to small exposures in the southern portion of the Planning Area.

Cieneba Series. Cieneba soils are located on rolling to mountainous uplands, with slopes of 5 to 75 degrees and elevations between 500 and 3000 feet MSL. Composition is predominantly excessively drained very shallow to shallow coarse sandy loams. Typical profiles extend to approximately 10 inches, below which lies the acidic igneous parent material. Cieneba soils form in materials weathered in place from granitic rock, and generally exhibit high moisture, friable texture, medium acidity, and granular structure throughout their profiles. Native vegetation consists of flat-top buckwheat, chamise, California sagebrush, and annual forbs and grasses. Primary uses include range, wildlife habitat, recreation, watershed, and cultivation for avocados and citrus. Cieneba soils are located extensively throughout the entire Escondido Planning Area.

Escondido Series. Escondido series soils are located on gently rolling to hilly uplands with slopes of 5 to 30 percent and elevations between 400 and 2800 feet MSL. They are comprised of moderately deep to deep, well-drained very fine sandy loams. Profiles are typically around 30 inches, incorporating granular cohesionless structure, friable texture, and slightly acidic to neutral pH throughout. Escondido soils were formed in material weathered in place from metamorphosed sandstone, and are underlain by metasedimentary and granitic rocks. Vegetation consists of filaree, ripgut brome, California sage brush, wild oats, and annual grasses and forbs, with a few oaks on north-facing slopes. These soils are utilized for range, citrus, tomatoes, flowers, barley, and grain hay, and are scattered throughout the project area in small exposures.

Exchequer Series. These soils are located on mountainous uplands with slopes of 9 to 70 percent and elevations ranging from 400 to 3000 feet MSL. Exchequer soils consist of shallow to very shallow, well-drained silt loams. Profiles extend to approximately 10 inches, with moist, blocky, friable, and slightly acidic soils throughout. Rock outcrops comprise around 10 percent of surface exposures, with metamorphic and igneous rocks underlying and forming the parent material for the series. Vegetation includes black sagebrush, California sagebrush, flattop buckwheat, sumac, and annual grasses and forbes. Exchequer soils are utilized mainly for wildlife habitat and watershed, with limited acreages used as range. Exposures are limited to a few small parcels in the southwestern portion of the Planning Area.

Fallbrook Series. Soils of the Fallbrook series occur on uplands with slopes of 2 to 30 percent and elevations of 200 to 2500 feet MSL. They consist of well-drained, moderately deep to deep sandy loams, clay loams, and decomposed granitic rocks. Typical profiles extend to around 90 inches, with slightly acid pH becoming moderately acid below 70 inches. Soils are moist in the upper 50 inches, with granular structure in the upper A horizon and angular blocky structure below. Soil texture is generally friable in the upper 12 inches and firm to very firm below that. Fallbrook soils form in material weathered in place from acid igneous rocks, chiefly grandiorite. Vegetation consists of annual grasses, oak or broadleaf chaparral, and intermittent chamise. These soils are utilized for avocado and citrus orchards, tomatoes, flowers, truck crops, grain, grain hay, and pasture. The Fallbrook series occurs extensively throughout much of the Planning Area.

Friant Series. Friant soils are located on mountainous upland slopes of 9 to 70 percent, at elevations between 500 and 3500 feet MSL. They are composed of shallow to very shallow, well-drained fine sandy loams derived from and overlying igneous and metasedimentary rock. Soil profiles are typically around 12 inches thick, with moist, friable, slightly acidic conditions throughout. Soil structure varies from granular in the upper 3 inches to massive in the remainder of the profile. Vegetation consists of California sagebrush, flattop buckwheat, white sage, wild oats, stipa, and annual grasses and forbs. Friant soils are utilized primarily for watershed and wildlife habitat, although small areas are used as range. The Friant series is present as a small number of relatively large exposures scattered throughout the Planning Area.

Grangeville Series. These soils occur on generally level alluvial fans and alluvial plains, at approximate elevations of 50 to 200 feet MSL. Grangeville soils are composed of moderately to poorly drained, very deep fine sandy loams derived from granitic alluvium. Profiles typically extend to more than 60 inches, with high soil moisture and moderate alkalinity present throughout. Structure is normally blocky and texture firm in the upper 11 inches, with massive structure and friable texture throughout the remainder of the profile. Native vegetation consists primarily of annual grasses and forbs, with agricultural uses including pasture, truck crops, tomatoes, and flowers. Soils at the Grangeville Series are limited to a small number of exposures in the west-central portion of the Planning Area.

Greenfield Series. Greenfield Series soils occur on alluvial fans and alluvial plains with slopes of 0 to 15 percent and elevations between 400 and 800 feet MSL. These soils consist of well-drained, very deep sandy loams derived from granitic alluvium. Representative profiles extend more than 65 inches, with high soil moisture and very friable texture present throughout and pH changing from slightly acidic to neutral conditions below 35 inches. Soil structure changes from granular in the upper 6 inches (A horizon) to blocky down to a depth of 35 inches (B horizon) to massive conditions below that. Indigenous vegetation includes soft chess, wild oats, ripgut brome, mustard, foxtail, filaree, and coast live oak. Greenfield soils are used for range, pasture, dry-farmed grain, citrus, truck crops, flowers, avocados, stone fruits, and tomatoes. This series occurs as a number of relatively small parcels scattered throughout the Planning Area.

Huerhuero Series. Soils of this series are generally located on low lying terrain associated with sandy marine sediments, from which they are derived. Slopes are highly variable ranging from 2 to 30 percent, with elevations ranging from 10 to 400 feet MSL. Undulating, hummocky topography termed mima mound occurs locally on certain soil types of this series. Huerhuero soils consist of moderately well-drained loams with clay subsoils. Soil profiles extend to over 70 inches, displaying moist soil conditions throughout. Abrupt changes from strongly acidic to moderately alkaline to neutral pH occur over the extent of typical profiles, with soil textures changing from firm to friable below 40 inches. Soil structure is also variable with depth, changing from massive to prismatic to blocky and back to massive. Native vegetation consists primarily of tarweed, wild oats, star-thistle, red brome, Russian-thistle, and annual grasses and forbs. Huerhuero soils are utilized for range, truck crops, tomatoes and flowers, with exposures limited to a number of small parcels in the west- and south-central portions of the Planning Area.

Las Posas Series. Las Posas Soils occur on uplands, with slopes of 2 to 65 percent and elevations between 200 and 3000 feet MSL. They consist of well-drained, moderately deep, stony fine sandy loams with clay subsoils. Underlying bedrock is deeply weathered basic igneous strata (gabbro), which constitutes the parent material. Profiles extend to over 30 inches, with high soil moisture, blocky structure, friable texture, and neutral pH present throughout. Vegetation includes chaparral-oak, chamise, sumas, ceanothus, California sagebrush, annual grasses and scattered oak. Los Posas soils are utilized for flowers, citrus, tomatoes, field crops, range, wildlife habitat, and watershed. This series occurs in a number of large areas associated with basic igneous rocks throughout the Planning Area.

Placentia Series. These soils are found on old alluvial fans with slopes of 0 to 15 percent and elevations ranging between 200 and 1800 feet MSL. The Placentia series consists of moderately well-drained sandy loams with sandy clay subsoils, formed from granitic alluvium. Typical profiles extend to over 60 inches. Moist soil conditions are present throughout, with texture changing from friable to firm below 13 inches. Both soil structure and pH vary considerably over profile depths. Structure is granular in the upper 4 inches, then massive down to 13 inches, prismatic from 13 to 34 inches, and massive again over the remainder of the profile. Medium acidic pH occurs in the upper 4 inches of a typical profile, changing to slightly acidic from 4 to 13 inches, and moderately alkaline over the rest of the profile. Indigenous vegetation includes scattered oak, soft chess, wild oats, filaree, chamise, and vinegarweed. Cultivated uses consist of dry farming, range, tomatoes, and flowers, with small acreages utilized for irrigated grain and orchards. Placentia soils are scattered throughout most of the Planning Area in variably sized parcels.

Ramona Series. Soils of the Ramona series are located on terraces and alluvial fans with slopes of 0 to 30 percent and elevations between 200 and 1800 feet MSL. These consist of well-drained, very deep sandy loams with sandy or gravelly clay loam subsoils. Profiles are up to 75 inches deep, with moist, friable soils throughout. Soil structure is blocky in the upper 60 inches and massive below, while pH values vary from slightly to medium acidic in the upper 25 inches to neutral over the rest of the profile. Vegetation is comprised of mouse barley, wild oats, filaree, soft chess, chamise and scattered oaks, and annual forbs. These soils are utilized for dry farming, citrus, truck crops, tomatoes, flowers, pasture, and range. Large tracts of Ramona soils are present in central Escondido, while small scattered parcels occur throughout the rest of the Planning Area.

Reiff Series. The Reiff series occurs on alluvial fans and alluvial plains with slopes of 0 to 9 percent and elevations between 200 and 1900 feet MSL. These soils include well-drained, very deep fine sandy and sandy loams formed in alluvium derived from granitics. Typical profiles extend to 60 inches, with moist, friable soils throughout. Structure varies from blocky in the upper 6 inches to massive over the rest of the profile, while pH conditions are gradational from slightly acid to moderately alkaline over the entire profile depth. Vegetation consists of wild oats, soft chess, filaree, mustard, and chamise. Cultivated uses include avocados, citrus, truck crops,

tomatoes, flowers, and field crops. Reiff soils are limited to minor exposures in the north-central portion of the Planning Area.

San Miguel Series. San Miguel soils are located in mountainous areas having slopes of 9 to 30 percent and elevations between 700 and 3300 feet. They consist of well-drained, shallow to moderately deep silt loams with clay subsoils. Underlying bedrock constitutes the parent material and consists of metavolcanics. Soil profiles extend to around 25 inches with high moisture throughout. Structure varies from massive in the upper 8 inches, to prismatic from 8 to 18 inches, to blocky below, while pH shifts from medium acidic in the upper 4 inches to strongly acidic over the remaining profile. Textures are friable throughout profile depths, except for the interval from 8 to 18 inches where firm soils are present. Vegetation is primarily chamise, ceanothus, and sumac, with minor amounts of understory filaree, soft chess, and wild oats. These soils are utilized for range, watershed, and wildlife habitat, and occur as a large exposure along the western shore of Lake Hodges and as small scattered parcels over the rest of the Planning Area.

Steep Gullied Land. Steep gullied land consists of steep areas that are actively eroding into old alluvium or decomposed rock. These occur as both large individual gullies and networks of smaller gullies on sparsely covered or bare slopes. Natural vegetation is a thin cover of shrubs and grasses, with this situation often accentuated by grazing, fires, and development. Soil profiles are absent, with steep gullied lands limited to a few small parcels in the southern portion of the Planning Area.

Stony Land. Stony land occurs on steeply sloping areas at the base of cliffs or below steep rocky slopes. Surface material is characterized by a predominance of rocky fragments, often as large as 3 to 6 feet in diameter. Fine material is not abundant and is usually restricted to areas between large rocks and boulders. Vegetation is sparse, consisting primarily of brush and a few scattered oaks where ample soil is present. Soil profiles are poorly developed or absent, with the surface material consisting primarily of regolith. Stony lands are limited to minor exposures in the southwestern portion of the Planning Area.

Visalia Series. These soils are located on alluvial fans and floodplains with slopes of 0 to 15 percent and elevations between 400 and 2000 feet. They consist of moderately well drained, very deep sandy loams and loams derived from granitic alluvium. Profiles extend to approximately 60 inches, with moist, friable, slightly acidic soils throughout. Structure varies from granular in the upper 12 inches to massive over the remainder of the profile. Vegetation is primarily annual grasses, chamise, flattop buckwheat, California live oak, and scrub oak. Visalia soils are utilized for avocados, citrus, walnut orchards, truck crops, irrigated pasture, field crops, tomatoes, flowers, and nursery stock. These soils occur as relatively small parcels scattered throughout most of the Planning Area.

Vista Series. Vista soils are found on uplands having slopes of 5 to 65 percent and elevations between 300 and 2500 feet MSL. They consist of well-drained, moderately deep to deep coarse sandy loams derived from acid igneous rocks (granodiorite and quartz diorite). Typical profiles extend to around 35 inches, with moist, friable, neutral to slightly acidic soils throughout. Soil structure varies from crumb structure in the upper 3 inches, to granular down to 19 inches, and massive over the remaining profile depth. Vegetation includes chamise, flattop buckwheat, mustard, sumac, sugarbush, soft chess, ripgut brome, wild oats, foxtail, annual forbs, and scattered oaks on north slopes and along drainages. Vista soils are abundant throughout the Planning Area in variable size parcels.

Wyman Series. The Wyman series occurs on alluvial fans with slopes of 2 to 15 percent and elevations from 400 to 2200 feet MSL. These soils consist of well-drained, very deep loams and clay loams formed in alluvium derived from igneous rock. Profiles extend to approximately 70 inches,

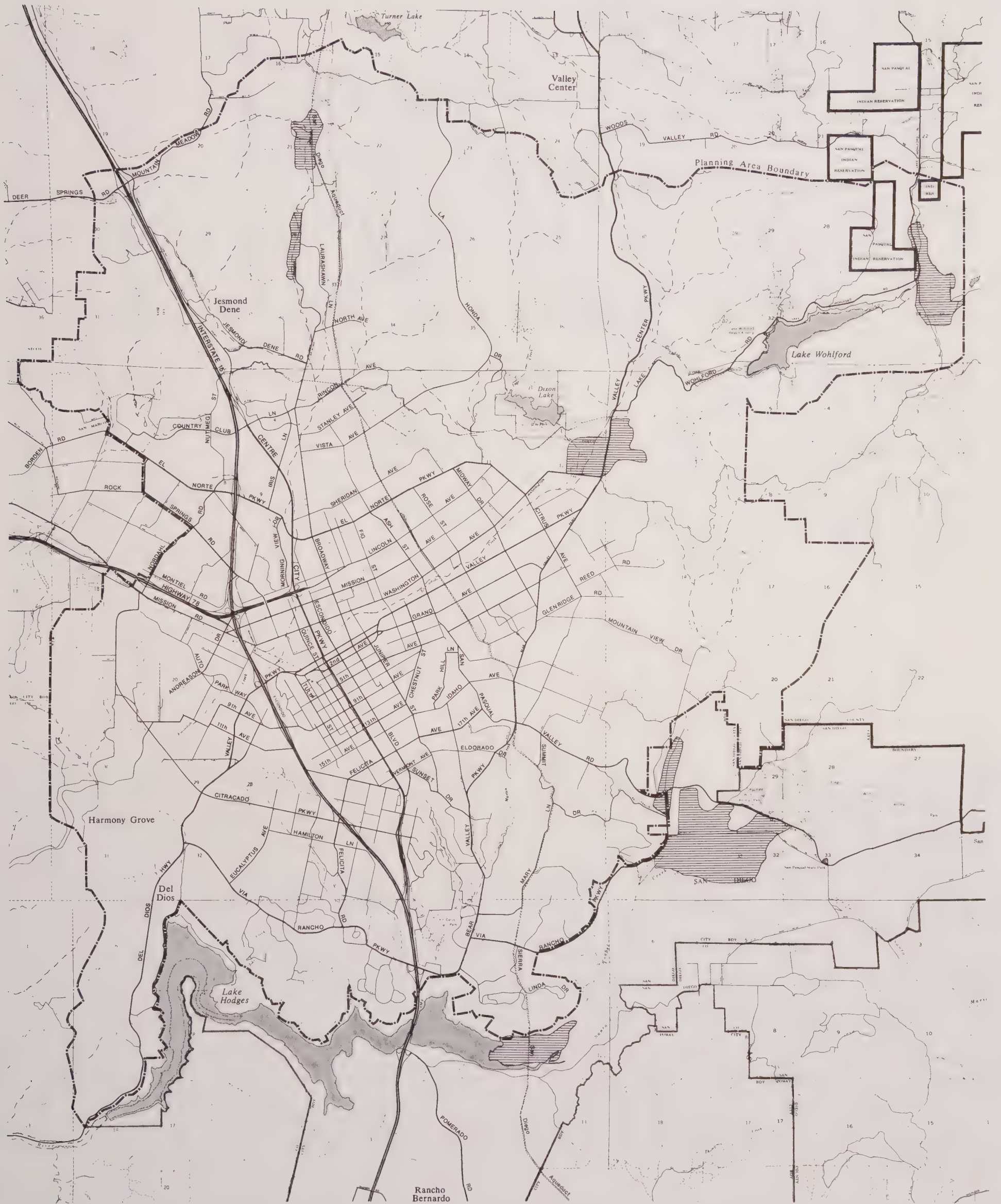


Figure V-4 PRIME AGRICULTURAL LANDS

 Prime Agricultural Lands

Source: SCS, Important Farmlands Inventory As Applied to the State of California, August 1982.

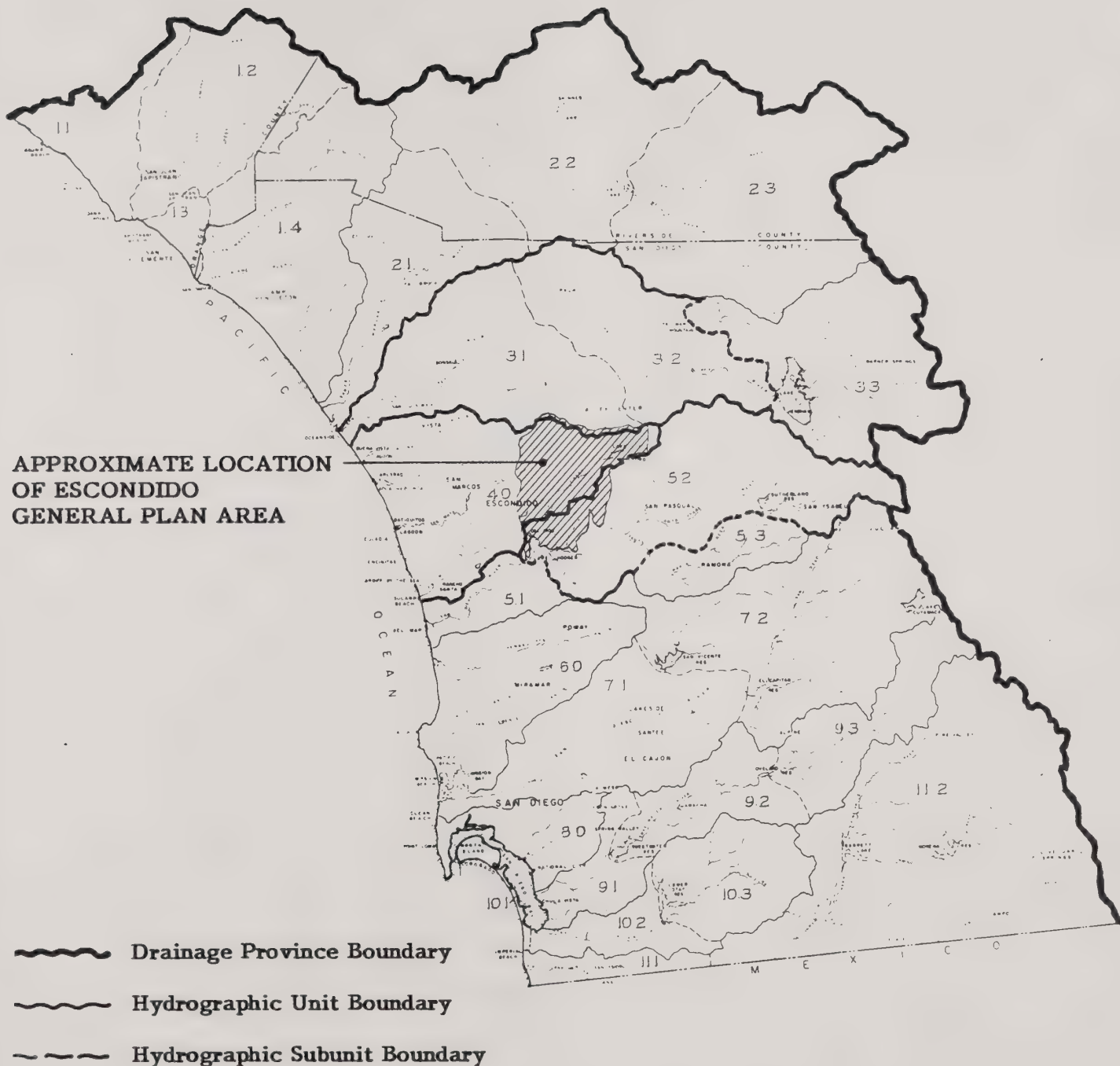


Figure V-5 BASIN PLAN SYSTEM

Source: State Water Resources Control Board, Regional Water Quality Control Board, 1975.

ESCONDIDO GENERAL PLAN PROGRAM



Miles
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Figure V-6 HYDROLOGY

-  Dam
-  Watershed Boundary
-  Channelized Drainage
-  Natural Drainage
-  100-Year Flood Boundary

Source: WESTEC Services.

Table V-6: Summary of Discharges

Flooding Source and Location	Drainage Area (Square Miles)	Peak Discharge (Cubic Feet per Second)			
		10-year	50-year	100-year	500-year
Escondido Creek at Harmony Grove Road	48.3	2,600	12,000	18,000	32,000
Reidy Creek upstream of Jesmond Dene Avenue	4.5	600	2,600	4,000	7,300
at Rincon Avenue	10.5	1,100	5,000	7,700	14,000
above confluence with Escondido Creek	15.1	1,300	5,000	7,700	14,000
Marten Creek at Bear Valley Parkway	3.5	600	1,900	2,800	6,100
Shallow Flooding Area - west Country Club Creek at Nutmeg Street, 1200 feet north of Golden Circle Drive	0.3	70	200	260	350
unnamed tributary at intersection of Golden Circle Drive and Country Club Lane	0.9	240	590	770	990
Country Club Creek at El Norte Parkway, 100 feet northwest of Bennett Avenue	2.1	540	1,330	1,700	2,200

Source: Federal Emergency Management Agency 1986

and Reidy creeks have been designed for and are capable of containing a 100-year flood. From Lincoln Avenue to Center City Parkway, Reidy Creek has been improved as an environmental channel considered adequate to handle 100-year storm runoff. Beyond these improved areas, the creeks are essentially in a natural state, with no flood protection measures provided.

Drainage into the San Dieguito River Basin, which flows adjacent to the southern boundary of the Planning Area, originates from a number of minor tributaries. The most significant of these is Marten Creek, which produces peak discharges at Bear Valley Parkway of 1,900 cfs for a 50-year storm and 2,800 cfs for a 100-year storm. The channel exists in a natural state, except those areas which have been altered by the construction of culverts to convey drainage in areas in which development has occurred.

A small area of the upstream end of the San Marcos Creek Basin lies within the Planning Area. The drainages which contribute significant runoff to that basin include Country Club Creek and an unnamed tributary, which together drain a 2.1 square mile watershed. Near the General Planning Area boundary, these streams produce ultimate runoff of over 1,300 cfs for a 50-year storm and 1,700 cfs for a 100-year storm. These drainages are in a relatively natural state; culverts have been incorporated in various areas where warranted by development.

2. GROUNDWATER

Groundwater occurrence in the Escondido area corresponds primarily with the central developed valley of the City. The Escondido Creek groundwater basin, located within the Carlsbad Hydrographic Unit, includes roughly 5,000 acres in the General Planning Area. Groundwater in the Escondido area is produced from more than 100 wells that generally tap water that is in decomposed granite. Depths to water in this basin average 50 feet or less. This water is used extensively for supply for the City of Escondido for domestic and agricultural irrigation. According to the State Water Resources and Regional Water Quality Control Boards (1975), water extraction from the basin amounts to about 6,000 acre-feet/year while the safe yield is estimated at 4,000 acre-feet/year. The generally shallow groundwater basin is naturally replenished through percolation of precipitation and surface runoff. Applied irrigation water, wastewater discharges, limited use of groundwater for domestic purposes, and use of large quantities of imported water also contribute significantly to replenishment of the basin.

Escondido contributes to surrounding groundwater basins located north and south of the Planning Area. Within the Bonsall subunit of the San Luis Rey Hydrographic Unit, a few minor tributaries carry runoff toward the relatively small groundwater basins located along the length of the San Luis Rey River. To the south, Marten Creek and a number of other small drainages contribute to groundwater in the San Pasqual Valley and the Lake Hodges area (located within the San Dieguito Hydrographic Unit).

3. WATER QUALITY

Surface water quality in the Carlsbad Hydrographic Unit and all of the San Diego Basin generally declines with increased distance downstream as a result of the cumulative contributions of pollutants in runoff from agricultural lands and urban areas (State Water Resources Control Board [SWRCB] 1975). Escondido, encompasses the eastern half (e.g., upstream portion) of the Carlsbad Hydrographic Unit; however, the City contributes agricultural and urban-associated pollutants to runoff within the area and moderately good surface water quality would therefore be expected. The primary areas of concern regarding pollution from agricultural sources include siltation, eutrophication, toxication, and microorganism contamination. Urban development generally increases the potential for runoff contamination above that of a non-urban area (SWRCB 1975).

This is due to the interception of airborne pollutants by precipitation, and the accumulation of contaminants in surface runoff or drainage structures.

Runoff which may contribute to the San Luis Rey Hydrographic Unit north of Escondido would be relatively minimal and primarily non-urban, and would not contribute significantly to surface water quality conditions within this unit.

The southern portion of Escondido contributes runoff of the San Pasqual Valley and Lake Hodges located within the San Dieguito Hydrographic Unit.

Relatively good surface water quality characterizes the San Pasqual Valley area, with sediment discharges and agricultural runoff as the primary influences on quality. The water in Lake Hodges is required to be of satisfactory quality at all times since it is utilized for domestic supply. The water quality is subject to fluctuation in conjunction with the volume available (e.g., runoff volumes, evaporation). Water quality problems for Lake Hodges in recent years have included increasing TDS and algae growth resulting from eutrophication (SWRCB 1975). The effects of these conditions has been a taste and odor problem in the water supply for those who utilize this source (e.g., Rancho Santa Fe and San Dieguito Irrigation Districts). Furthermore, increased development within this drainage area will continue to constitute a serious potential water quality problem for the future.

A summary comparison of average runoff wasteloads for various land uses is shown in Table V-7.

The State Water Resources and Regional Water Quality Control boards (1978) have identified existing and potential beneficial uses for inland surface waters. Within the Carlsbad Hydrographic Unit in the Escondido vicinity, existing uses consist of the following:

- Municipal, domestic, and agricultural supply
- Hydropower generation
- Water contact and non-contact water recreation
- Warm and cold freshwater habitat
- Wildlife habitat
- The preservation of rare and endangered species

The only potential beneficial use identified was for industrial service supply.

Existing beneficial uses for the portion of the San Luis Rey Hydrographic Unit associated with Escondido, i.e., the Bonsall Hydrographic Subunit, includes the following:

- Agricultural and industrial service supply
- Water contact and non-contact water recreation
- Warm freshwater habitat
- Wildlife habitat
- The preservation of rare and endangered species.

No potential was identified for additional future use of surface water.

Within the San Dieguito Hydrographic Unit, beneficial uses of surface waters have been identified for the San Pasqual and Lake Hodges area:

- Municipal, domestic, agricultural, industrial service, and industrial process supply
- Non-contact water recreation
- Wildlife habitat

Table V-7: Summary of Surface Runoff Pollution Coefficients

<u>Land Use</u>	<u>Total Distilled Solids (TDS) (lb/acre-year)</u>	<u>Biochemical oxygen demand (BOD) (lb/acre-year)</u>	<u>Total Nitrogen (lb/acre-year)</u>	<u>Total Phosphorus (lb/acre-year)</u>
Open space, Barren	550	6.0	2.0	0.3
Grains, Hay	250	20	10	0.8
Citrus, Walnuts, Vegetables	250	30	30	1.5
Residential, Trailer Parks	400	30	12	2.0
Commercial, Parking	500	40	12	1.0
Industrial	550	30	12	1.2
Picnic, Golf Courses, Green Lawns	250	18	15	0.5

Source: SWRCB 1975

Lake Hodges, in addition to those uses identified for San Pasqual, includes water contact recreation and warm and cold freshwater habitat. Additionally, groundwater recharge has been identified as a potential beneficial use for both areas.

Groundwater in the Escondido Creek groundwater basin is used extensively for supply for the City of Escondido, for domestic purposes, and for irrigation of agriculture including citrus orchards. The quality of groundwater along Escondido Creek is influenced by the quantity, quality, and use of local water resources and by water imported from well fields near Lake Hodges and Lake Henshaw, from the Colorado River and from surface diversion of the San Luis Rey River. Additionally, the effects of wastewaters on the quality of groundwater, especially past discharges, continue to be reflected (SWRCB 1975). Groundwater in the basin between Escondido and San Marcos is judged to be marginal; identified beneficial uses include municipal, agricultural and industrial supply. East and southeast of the City of Escondido, groundwater is of generally inferior quality for most beneficial uses and judged to be marginal or inferior for agricultural irrigation. The only identified beneficial use is for industrial service supply. Municipal and agricultural supply have been identified as existing beneficial uses, but water quality does not meet the generally accepted quality criteria for such uses.

Existing beneficial uses of groundwater north of Escondido, within the Bonsall Subunit of the San Luis Rey Hydrographic Unit, include municipal, agricultural, industrial, and groundwater recharge. No potential beneficial uses were identified for this area. In general, the quality of groundwater in this upper portion of the San Luis Rey Hydrographic Unit is acceptable for most present beneficial uses. The quality of water in most portions is, however, threatened by continuous agricultural practices, especially irrigation of citrus and avocado crops. Although many of the basins are fairly small and can be flushed by annual rains, continued importation, irrigation, and recycling of groundwater for agricultural purposes will tend to degrade the quality of these basins.

Beneficial uses of groundwater in the San Pasqual and Lake Hodges area of the San Dieguito Hydrographic Unit are similar to those identified for the east and southeast portions of the Escondido groundwater basin. Industrial supply is the only existing beneficial use identified. Municipal and agricultural supply are identified as beneficial uses; as previously mentioned, however, quality does not meet the accepted quality criteria for these uses. The presence of high nitrate and sulfate concentrations result in marginal to inferior ratings for domestic purposes. Citrus operations in the hillsides surrounding San Pasqual Valley contribute minerals as well as nitrates to the downstream groundwater basins. Extensive crop irrigation and recycling of irrigation water in the valley are expected to degrade seriously the quality of groundwater in this basin (SWRCB 1975). One plan under consideration by the City of Escondido to curtail groundwater degradation (and depletion) in the San Pasqual Valley calls for the discharge of reclaimed water from the Escondido treatment plant to the San Pasqual Valley area. Evaluation of the potential problems resulting from this recharge, including salt balance, and recycling effects, need to be considered.

D. PALEONTOLOGY

The Escondido planning area incorporates geologic strata ranging in age from Triassic to Quaternary (Figure V-2 and Table V-5). Included within these rocks are a number of formations known to be fossiliferous, although no known fossil occurrences have been reported within the Escondido Planning Area. In addition, there are formations present for which no documented occurrence of paleontological resources exists, but which are largely unsurveyed and may possess suitable physical and chemical characteristics for the preservation of fossils. Below is a listing and brief description of the geologic formations present within the planning area, as well as an assessment of the potential for paleontological resources in each.

Quaternary Alluvium and Nonmarine Terrace Deposits. These materials are largely Holocene (recent) in age, having been deposited within the last 10,000 years. They consist of undifferentiated and largely unconsolidated silt, sand, gravel, and clay. Both alluvial and terrace materials are deposited primarily through the action of running water, and are henceforth referred to collectively as alluvium. The accumulation of paleontological resources in alluvium has occurred at a number of locations, including a fossil mammoth collected northwest of Tijuana, Mexico (WESTEC 1975). Despite such documented occurrences, however, the presence of paleontological resources in alluvium is limited due to the destructive nature of alluvial deposition. That is, alluvium is produced and deposited in high energy environments which tend to obliterate most fossil remains. Those that endure are usually composed of highly resistant materials (such as teeth and jaws) normally associated with vertebrate remains. The most common fauna in such deposits are Cenozoic land mammals such as rodents, horses, and camels. Cenozoic vertebrate fossils are generally considered significant due to their relative scarcity in many areas, including southern California. Quaternary alluvial deposits, however, generally are not considered significant for paleontological resources due to the overall lack of fossil remains located there (WESTEC 1975).

Pleistocene Nonmarine Sedimentary Deposits. These alluvial materials consist of dissected and occasionally deformed alluvial fans, fanglomerates, and conglomerates. Sedimentary strata including sandstone, mudstone, and shale, occur within equivalent formations to the north and northeast of Escondido, and could be present within the project area. A number of these units are known to be fossiliferous, with vertebrate faunal remains occurring in the Bautista Beds along the San Jacinto fault zone (California Division of Mines and Geology 1966), and fossil horse teeth have been collected from Pleistocene beds in Pala Valley (Demere 1987). Because of the lack of investigation within Pleistocene nonmarine units in the project area, the occurrence of fossil-bearing sedimentary beds is considered a possibility. If they occur, these beds could contain significant paleontological resources akin to those in nearby areas.

Cretaceous Intrusives. These intrusives include a variety of igneous intrusive rock types related to the southern California batholith. Igneous rocks by definition solidify from a molten or semi-molten state, and thus contain no potential for the occurrence of paleontological resources.

Upper Jurassic Metavolcanic Rocks. These rocks consist of mildly metamorphosed, interbedded flows, tuffs, breccias, agglomerates, and clastic sedimentary rocks of the Santiago Peak Volcanics. These units were intruded by the southern California batholith, and are present mainly as roof pendants and smaller inclusions within the igneous exposures. Several of the clastic units of the Santiago Peak Volcanics are known to be fossiliferous, and have been inventoried in a number of locations including an area southwest of the project site near Rancho Santa Fe. This investigation noted a variety of taxa, including bivalves, cephalopods, oysters, echinoderms, porifera, and radiolarians. Two of these (bivalves and cephalopods) have been identified to the species level, and are utilized in determining regional and local relative chronological relationships. It has been suggested that further investigation could result in radiolarians being used for similar purposes (Abbott 1982).

Because of their ability to provide diagnostic age correlation, the fossiliferous members of the Santiago Peak Volcanics are considered scientifically significant. While no fossils have been observed within the project area from these units, they are considered potentially significant due to the lack of onsite investigation and the presence of equivalent offsite fossiliferous units.

Upper Jurassic Hyabyssal Intrusive Rocks. These intrusives are associated with the Santiago Peak Volcanics and are considered by Kennedy and Peterson (1975) to be feeders for the volcanic members of that formation, rather than portions of the southern California batholith. Hyabyssal intrusive rocks are crystallized from molten or semi-molten material and contain no potential for the occurrence of paleontological resources.

Triassic/Jurassic Marine Sedimentary and Metasedimentary Rocks. Triassic/Jurassic marine strata include several varieties of generally fine-grained metamorphic units assigned to the Bedford Canyon formation. These consist primarily of schist and gneiss, with minor exposures of other metamorphic assemblages also present. No fossils have been observed within the Planning Area from these rocks, although offsite quartzite and recrystallized limestone units are known to contain mid to late Mesozoic faunal assemblages (California Division of Mines and Geology 1963, 1966). These have been used to correlate age relationships and are considered paleontologically significant. The Bedford Canyon formation is considered potentially significant in the project area due to the lack of investigation there and the existence of equivalent fossiliferous units offsite.

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VI. CULTURAL RESOURCES

A. HISTORIC RESOURCES

Historical Overview. Escondido's history began after 1769 with the scouting parties for Mission San Diego and later, from Mission San Luis Rey. Because of the relative remoteness of Escondido, early historic land use was limited to grazing although Spanish officials also made forays into the area in search of Native American laborers and converts.

With the secularization of California's missions in 1832, land holding gradually switched from Crown and Church to private ownership. On May 10, 1843, the tract known as Rancho Rincon del Diablo ("Corner of the Devil") was granted to Juan Bautista Alvarado. This 12,633-acre tract included most of present-day Escondido.

In 1855, the grant was sold to Judge Oliver Witherby and remained in his possession until 1868 when the land was purchased by the Wolfskin brothers. Through dry farming and extensive cultivation, the Wolfskins turned the ranch land into a lush farm and thus began the gradual shift from livestock grazing to farming and agriculture. The Escondido Land and Town Company purchased the tract in 1886 and began subdividing the land and laying out the town of Escondido. Over the next decade, the town grew to include retail businesses associated with the railroad and with farming/ranching as well as with serving the population on the whole. The economic base was focused on agriculture; gold mining and tourism provided some financial impetus although these aspects were limited.

As the town grew and incorporated, it evolved into a balanced residential, industrial, and agricultural community. The historical record of Escondido's economic, social, and political life from land grant to the "Hub of North County" is reflected in its architecture and setting. As with many southern California communities, the architectural heritage of Escondido is largely one of transplanted styles and motifs, such as Carpenter's Gothic, Eastlake, French Second Empire, Italliantate, Colonial Revival, Neoclassic Row Houses, and Queen Anne. Indigenous styles include Mission and Mission Revival as well as California Craftsman and Bungalow.

Recorded Historical Resources. Much of the heritage that is Escondido is just coming to public notice. The ruins of the Rincon del Diablo land grant adobe, home of the first family to hold title for the area now known as Escondido, has recently been recorded as a location of historical interest. It is the only known historic resource for the pre-Anglo American Era of Escondido. In terms of heritage, this resource could prove invaluable in reconstructing how the first historic Escondido residents lived and worked in this environment.

Escondido began the process of developing its current preservation ordinance in 1982 with the approval of community development block grant funds for a survey of historic and cultural resources within its boundaries. Donald A. Cotton Associates, an urban planning firm, was hired to conduct this survey. The firm was to document historic events, famous people, and renowned builders or architects who were involved with the significant buildings or areas. Evaluation of all pre-1940 structures was performed with the help and guidance of an historic preservation committee of Escondido. The committee included three historical society members, a councilperson, an administrative assistant, an architect, and a city planner.

The survey was based on guidelines set forth by the state historic resources inventory, survey workbook. Three documents were produced by the survey:

- Volume I - A survey report identifying methodology, purpose, and criteria, summarizing major findings and recommending approaches relating to the element (Escondido) and ordinance.

- Volume II-VI - Consists of the file documents containing the inventory forms and photos.
- Volume VII - The executive summary highlights the components of survey for distribution and use by the city officials.

Consideration should be made for the monitoring for historical materials of all subsurface work relating to the storm drain and undergoing of utilities in these focus blocks (Memorandum: Rolf Gunnarson CDC 1987).

As provided in more detail in the historical and cultural resources report prepared for the City of Escondido by Donald A. Cotton Associates, an evaluation of pre-1940 structures within Escondido revealed 992 historic properties. According to the ranking system used in that report (see Table VI-1), 54 structures were considered as likely candidates for National Register inclusion and 97 additional structures were deemed as possibly eligible properties. As an indication of the rate at which important historical structures can be lost, 12 of the 54 "likely candidate" structures listed in the 1983 study have been destroyed, a reduction of almost 25 percent of the most significant structures in the City.

The 1983 Cotton cultural resources study made the following findings:

"A" Category Structures. These unique structures comprise less than 5 percent of the historic buildings in the City, i.e., some 52 structures of the total buildings surveyed. Although many of these structures are scattered in separate locations, some clusters are notable:

- Four structures at the Old High School, 200 block of South Hickory;
- Four structures in the 400 block of East Fifth Avenue;
- Six structures in the 300 to 500 blocks of East Sixth Avenue; and
- Three structures in the 900 block of West Ninth Avenue.

Buildings within the category have been determined to be likely candidates for individual listing on the National Register of Historic Places. Many of these buildings have been designated "A" for their architectural merit, but some, like those of the Old High School, for their social or economic importance in the City's history.

"B" Category Buildings. These distinctive structures include almost 10 percent of the historic buildings in the City, or approximately 100 of the 1,000 buildings surveyed. Mapping reveals more clusters of these buildings, sometimes in areas near to "A" category clusters as follows:

- Five structures in the 100 to 300 blocks of East Grand Avenue;
- Six structures along South Juniper Street, three of which are in the 100 to 200 blocks;
- Six structures along Fifth Avenue, three of which are in the 400 block of East Fifth (near "A" structures);
- Five structures along Sixth Avenue, three of which are in the 500 block of East Sixth (near "A" structures);
- Six structures along Seventh Avenue, four of which are in the 100 to 300 blocks of East Seventh; and
- Three structures in the 100 to 200 blocks of West Tenth Avenue.

Buildings in this category may be eligible for individual listing in the National Register, particularly if further research proves a relationship to important events or persons in history. Other likely candidates for the National Register listed as "B" category are buildings which are known to be important in the City's history but have been altered. If restored, some of these buildings can be excepted for National Register listing. Even if no notable relationship exists,

Table VI-1: Summary of Findings, Survey of Historic/Cultural Resources City of Escondido

<u>Category or Rating</u>	<u>Number</u>	<u>% of Total Surveyed</u>	<u>Definition of Category</u>	<u>Examples</u>
A	54	5.4%	- Notable structures due to age, architecture, or role in City's history - Likely candidates for National Register	- Heritage Walk buildings - Old High School on S. Hickory - Santa Fe Station - Bandy House on S. Juniper
B	97	9.8%	- Well-designed buildings - May prove eligible for National Register with future research or removal of modifications	- Central School buildings - Selected commercial buildings - Clusters of houses, particularly on 5th, 6th, and 7th avenues
C	330	33.3%	- Modest structures built prior to 1940 - Likely candidates as contributors to historic districts - Also includes possibly significant commercial structures where facade is hidden.	- Many commercial structures - Numerous residences, with clusters in 100 bl. of N. Juniper, 300 bl. of Maple, 300 bl. of N. Waverly, 400 bl. of W. 4th, 100 bl. of W. & E. 6th, & 200 bl. of W. 10th
D	511	51.5%	- Very modest structures built prior to 1940 - Also, more elaborate structures which are extensively altered - Restorable buildings which could contribute to an historic district	- Located throughout the City - numerous modest homes - Small alley houses or second house on a lot - Severely altered structures
TOTAL	992	100%		

clusters of these buildings, along with buildings from other categories, may well reflect the history of Escondido or the development of the region so as to be listed as a district on the National Register.

"C" Category Buildings. Approximately one-third (about 330) of all the buildings surveyed have been given a "C" designation. These numerous buildings are distributed throughout the City, but are particularly concentrated in the older City core. Most of these buildings, particularly in residential areas, are not likely to have been important enough to warrant individual listing in the National Register. Collectively, however, they represent a major resource and could be important in the formation of historic districts.

Many commercial buildings along Grand Avenue have also been given a "C" designation. Research indicates that many of these buildings have an historic core, sometimes dating back to the Pioneer period. However, later facade alterations have hidden the early buildings so completely that it is not possible to determine (without detailed architectural study) how much of the original building remains. If major design features are uncovered or are restorable, these buildings could well be eligible for individual listing in the National Register ("A" Category) since they are very likely to have been important in the City's history.

"D" Category Buildings. About 50 percent of the buildings surveyed fall within the "D" category. These buildings, while modest and often altered, represent a substantial portion of the City's history and are good examples of Workers' cottages. While unlikely to be the basis of a National Register district, some of these structures could contribute to the character of such a district. Locally designated districts may also be formed and can include or be based on these structures.

The survey identified many modest little "alley houses" which were often given a "D" rating. They were built as homes or converted from garages for rentals or for members of the extended family.

As the 1983 Cotton cultural resources report recommended,

The primary conclusion to be drawn from the survey results is that for a relatively small town that experienced major growth surges in the 50s and 60s (decades beyond the scope of the survey), Escondido still has an extensive and rich resource of historic buildings. The type of historic programs and limits of future work based on these resources are bound only by the limits of interest and energy of the people of the City interested in preservation and the level of concern/interest/funding by City officials.

Doubtless, the City is well advised to continue with the second phase of the study which is intended to include preparation of an Historic Preservation Element of the General Plan and an implementing ordinance. In particular, supplementing the City's plan review process to include a review of the historic information on sites of proposed projects, is an important potential program related to the ordinance and element. Many other options are open to the City either to be included in the Phase II effort or to be considered as later projects for the Historical Society or City staff/consultants.

These additional options might well be designed to focus on the problem solving aspect of preservation and designed to deal with problems identified early in this report. For example, one or more historic districts could be designated for areas needing rehabilitation in order to take advantage of Federal tax incentive programs to aid in local revitalization of housing commercial buildings.

Public education programs can be designed to attract widespread local interest in preservation. In this respect, the Escondido Historic Society already has an active program with Preservation Week activities, old house tours, student research projects, and other programs. However, with the survey information as a base, these programs can be expanded both to generate interest in preservation and to supplement collected historical information and resources.

Finally, the City may wish to consider developing a Specific Plan (or Plans) to encompass particular portions of the City. These plans might consider how to integrate historic structures with new ones or how to alter historic structures for adaptive reuse.

B. PREHISTORIC RESOURCES

1. Applicable Legislation Rules, Regulations

Both state and federal laws may be applicable for the protection of cultural resources. CEQA provides that if a "project may cause damage to an important archaeological resource, the project may have a significant effect on the environment" (CEQA, Appendix K, which includes criteria to identify "important" archaeological resources). Should federal funds or federal lands be involved, the National Environmental Protection Act is applicable.

2. Cultural Prehistory Overview

From roughly 9000 years ago to present, the area now comprising San Diego County has been occupied by Native American peoples. Two of the distinct periods (Early and Late) identified in the archaeological record in San Diego County date to between approximately 9,000 years ago until approximately 3,000 years ago. The Early Period includes both the San Dieguito and La Jolla complexes. The earliest people to occupy San Diego County are identified with the San Dieguito complex. These people had abandoned drying inland lakes of the present-day desert and relocated to inland and coastal areas of the County. These people made sophisticated stone tools, milled plant seeds, and, upon relocation, gathered marine resources of shellfish and fish. This change in subsistence and related changes in site settlement and stone tool technology is called by archaeologists the La Jolla Complex.

La Jolla Complex sites tend to be located near the coast. The people who occupied these sites depended primarily upon marine resources, as well as seed and vegetable foods. In general, the stone tool technology associated with these people is less sophisticated than the stone tool technology of the San Dieguito period. This is true particularly for coastal La Jolla sites where cobble-based tools are common. Inland La Jolla sites, termed Pauma by True (1959), more closely resemble San Dieguito sites and are characterized by finely-made stone tools, a predominance of grinding implements (manos and metates in particular), and a lack of shellfish remains. The terms La Jolla Complex and Pauma Complex appear to reflect availability of food, location of sites, and available stone tool material for people occupying different regions of San Diego County within the same general time period.

Within the past 2000 years, Yuman and Shoshonean material culture traits from the east diffused into Imperial and San Diego counties. This period is identified as the Late Period. Yuman material culture traits include ceramic objects, the use of obsidian from Obsidian Butte for tools, and the practice of cremation. For the Planning Area, Luiseño occupation is identified as San Luis Rey I and San Luis Rey II.

3. Sites Recorded

Two hundred thirty-two archaeological sites have been recorded within the study area. At least 16 sites were identified by Malcolm Rogers during the 1920s, and A. Treganza and D.L. True recorded 48 sites during the 1960s. These 64 sites comprise only a small portion of the total number of prehistoric sites located in this rich valley.

The lack of legal regulations governing developmental impacts before 1970 allowed unregulated development within the City of Escondido and elsewhere. The implementation of environmental protection laws, specifically, the California Environmental Quality Act (CEQA), has greatly enriched our data base and knowledge of prehistoric lifeways in all of California, including northern San Diego County. During the 1970s and 1980s over 150 archaeological sites were recorded within the study area. These sites have been classified into the following 10 site types:

- Major Habitation - This site type represents long term and/or seasonal activity. It is typified by both primary and secondary flaking, flora and fauna remains, variety of artifacts (milling, lithics, pottery) and the presence of a developed midden.
- Minor Habitation - This site type represents seasonal activity, and is typified by the characteristics of a village site but lacks a developed midden.
- Milling Station - This site type is characterized by food processing of plant seeds by grinding or pounding, as evidenced by mortars, manos, and metates or milling slicks. This site type may also contain small amounts of flakes or pottery but lacks midden.
- Lithic Scatter - This site type is characterized by the presence of cores and flakes. Activities represented are core preparation or tool manufacture.
- Shell Scatter - This site type is characterized primarily by shell fragments. Small amounts of lithic artifacts and/or pottery may be associated with shell scatters.
- Rock Art - These sites include figures or designs painted on rocks (pictographs), or etched into the rock (petroglyphs).
- Rock Shelter - This site type consists of rock shelter or cave that was used for specialized activities or occupation.
- Rock Feature - The site type consists of an alignment of rocks for habitation, food storage base (grainery), or other use.
- Quarry - A quarry site is resource area that was used for the procurement of lithic materials for tool manufacture. Initial cobble reduction activities are evident at quarry sites in the form of flakes, angular waste fragments, cores and hammerstones.
- Isolated Find - A single occurrence of an artifact such as a flake, tool, core, mano, metate, or potsherd is considered an isolated find.

These definitions assist in categorizing the sites into general types. Known sites within the project area are listed on Table VI-2 and include 32 (12%) major habitation sites, 56 (22%) minor habitation sites, 92 (39%) milling stations, 11 (4%) lithic scatters, 1 (.004%) shell scatters, 11 (4%) rock features, 4 (1.7%) rock shelters, 4 (1.7%) rock art sites, 2 (0.86%) isolated finds, and 17 (7.3%) unclassified.

Table VI-2: NUMBER AND PERCENT OF SITES BY SITE TYPE

Site Type	Total Existing Site Record	Percent of Site Record
Major Habitation	32	13.79%
Minor Habitation	56	24.14%
Milling Station	92	39.66%
Lithic Scatter	13	5.60%
Shell Scatter	1	0.43%
Rock Art	4	1.72%
Rock Shelter	4	1.72%
Rock Feature	11	4.74%
Isolated Find	2	0.86%
No Information	17	7.33%
TOTAL	232	100.00%

Association of archaeological sites to cultural group is based on information taken from site record forms such as culture group identification or presence of temporal artifacts (i.e., pottery = later period). Only 58 of the 232 recorded sites can be typed to culture group. These 58 are divided between San Dieguito (20%), La Jolla (30%) and Late Period (50%).

Archaeological surveys within the project area have been conducted primarily around the periphery of "old" Escondido, with a concentration of recent surveys in the southern and western portions of the project area. The northern and eastern portions of the study area contain steep slopes and hence are less developed and have not been surveyed for archaeological resources.

The number of sites excavated within the project area prior to 1970 cannot be determined due to incomplete or nonexistant record forms and field notes from these early archaeological studies. The following discussion reflects work completed after 1970.

Over 30 sites have been tested and/or mitigated in association with development in Escondido. The results have contributed to our knowledge of the prehistory of Escondido providing limited examples of prehistoric life circa 9000 years before the present (7000 B.C.) to historic contact.

Previous surveys have provided an inventory of approximately 11,000 acres, or roughly 20 percent of the Planning Area. Few, if any, archaeological studies have been conducted in the core area of the City. Areas of high sensitivity include those areas within 1 mile of permanent or semi-permanent water, the foothills and knolls surrounding Escondido Valley, and areas with fine-grained metavolcanic rock (i.e., along the western edge of the Planning Area)

In all, 77 archaeological surveys, 4 testing reports, 8 mitigation programs, and 1 overview have been conducted. These 77 archaeological surveys can be used as a general guide to identify the archaeological potential of the Planning Area. If it is assumed that the archaeological surveys represent a 20 percent random sample of the Planning Area, then 6.76 archaeological sites per square mile can be projected.

Based on the existing record and reviewing the sites with respect to elevation, it can be noted that habitation sites (major and minor) (86%) are located primarily below the 1050-foot elevation (Table VI-3). The majority (89%) of lithic scatters, shell scatters, and rock art sites are also located below the 1050-foot elevation. All rock shelters are located above the 1050-foot elevation, and rock features and milling stations suggest no relationship to elevation.

Table VI-3: SITE TYPE BY ELEVATION

Site Type	300-1050 Feet	1050 to 2300 Feet	TOTAL	PERCENT
Major Habitation	26	6	32	15.02%
Minor Habitation	51	5	56	26.29%
Rock Feature	6	5	11	5.16%
Rock Shelter	0	4	4	1.88%
Milling Station	73	19	92	43.19%
Lithic Scatter	11	2	13	6.10%
Shell Scatter	1	0	1	0.47%
Rock Art	4	0	4	1.88%
TOTAL	172	41	213	100.00%
PERCENT	81.00%	19.00%	100.00%	

VII. NATURAL AND MAN-MADE HAZARDS

A. STEEP SLOPES

1. Applicable Legislation, Rules, Regulations

The City of Escondido Uniform Building Code contains a Grading Ordinance which regulates grading activities related to (among other issues) slope stability (City of Escondido 1975a). Specific considerations regarding slopes include restricting development in steep areas, limiting the amount of natural landform and vegetation disturbances, and requiring appropriate reclamation and revegetation. In addition, site-specific soils or geology reports can be required for development on slopes greater than 10 percent or where conditions otherwise warrant. San Diego County utilizes similar codes in the unincorporated areas around Escondido, so that the entire Planning Area is subject to relatively uniform grading regulation.

2. Setting

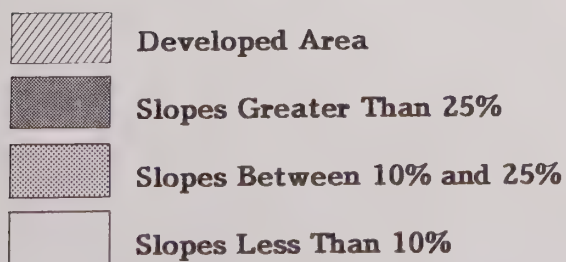
Existing slopes. The Escondido Planning Area is located in a region of rugged foothills interspaced with relatively flat-lying valleys, and includes both steeply inclined and level terrain. Much of the latter is located in Escondido Valley and has been heavily developed, while most of the steeper areas are relatively undisturbed (Figure VII-1).

Slope stability. The stability of sloped areas is a function of several factors including slope angle, height, composition, and structure of the underlying soil and geologic formations, surface and subsurface moisture conditions, and vegetation type and density. Unstable slopes can result in landslides or ground failures, defined as the downhill movement of earth material under the force of gravity (City of Escondido 1975b). The Escondido area is generally free from unstable slopes and landsliding activities, due to the presence of favorable physical and biological characteristics as well as a lack of development on steep slopes. Natural undisturbed slopes are normally in a state of equilibrium based on the specific set of local circumstances, and are not subject to landsliding or ground failure (excluding seismically induced events which are discussed separately in Section VII-C). Development in sloped areas can upset the natural equilibrium by significantly altering physical and biological relationships. Following is a description of the salient features regarding slope stability, as well as an overall summary of landsliding potential in the project area.

Slope Angle. Approximately half of the Planning Area contains slopes greater than 10 percent, with half of this area (or one quarter of the total Planning Area) incorporating slopes of over 25 percent (Figure VII-1). Much of the steeper terrain lies in rugged, isolated areas, although a number of slopes abut relatively flat-lying valleys and may be subject to future development. While most steep slopes are currently undeveloped, a number of roads and utility lines traverse steep terrain, resulting in excavated cuts and fills. These impact significantly the equilibrium of natural slopes and increase the potential for landslides or failures. Cuts and fills are often intentionally steep to reduce the amount of lateral excavation necessary. This can be a major contribution to landsliding potential, especially where other factors combine with slope angle to reduce stability. This situation is evidenced by the only documented landslide inside the Planning Area, located northeast of Lake Wohlford (see Figure V-2). A landslide occurred here on February 24, 1969 at a steep, 100-foot high cut along Valley Center Road. The primary causes of this landslide were a combination of a tall, steep roadcut, and locally unstable soil conditions. Soils in this area, which consists of granular, cohesionless surface material with a clay subsoil, are highly susceptible to erosion. Other factors likely contributing to this event include the normal lack of stabilizing vegetation on steep roadcuts, and the fact that the landslide occurred during the wet season of the year when soil moisture levels are often relatively high. Slope angle therefore plays a significant albeit not exclusive role in the determination of overall slope stability. While



Figure VII-1 GENERALIZED SLOPE MAP



Source: WESTEC Services.

slopes in excess of 30 percent are considered unsuitable for most types of urban development, much steeper slopes can be entirely stable under proper conditions. In addition, it should be noted that steep slopes can often be rendered usable by proper engineering techniques, although such methods are frequently cost-prohibitive. It is likely that many of the steeper slopes in the Planning Area will prove unsuitable for development, although this will almost certainly be attributable to a number of interrelated physical characteristics.

Geology and Soils. The Escondido Planning Area incorporates generally firm competent bedrock and well-drained loamy soils, features tending to induce slope stability. Physical characteristics (especially pertaining to soils) are locally variable throughout the site, however, resulting in an irregular influence on slope stability as described below.

Local bedrock consists of hard, weather-resistant igneous and metamorphic rocks, displaying massive or gently dipping structure. These rocks directly underlie most soils and influence soil stability on the basis of structural characteristics. That is, incompetent materials prone to rockslides or failures and steeply dipping downslope bedding facilitating movement by gravity are generally absent from the project area. Thus, local bedrock provides a firm base for soils and do not contribute significantly to slope instability. Locally, areas of exposed bedrock may exhibit unstable conditions in steep or erosion prone areas. This situation can be aggravated by development, which often involves the excavation of steep cut and fill slopes as well as the removal of native vegetation.

Soils in the Planning Area, while primarily free from landsliding activity on undisturbed slopes, locally exhibit a number of features which may induce instability subsequent to development. Specifically, many soils in steep areas consist of a sandy surface layer overlying clayey subsoils. Runoff and erosion potential in these areas is often high, due to the cohesionless nature of the surface soil and the limited drainage capacity of the clay subsoils. In an undisturbed setting, these slopes reach a state of equilibrium due primarily to the presence of a stabilizing vegetative cover and the limited amount of precipitation and surface runoff. Once developed, however, these areas are often completely stripped of native vegetation and subjected to irrigation associated with agriculture or landscaping. Consequently, the natural potential for slope instability is accentuated, and the possibility for landslides or slope failures is increased.

Hydrology. Surface runoff in the Planning Area is intermittent, with mean annual precipitation ranging between 10 and 20 inches (U.S. Soil Conservation Service 1973). These semi-arid climatic conditions result in generally moderate soil moisture levels, which do not significantly impact slope stability. Precipitation is seasonal and irregular, however, with heavy runoff possible anywhere in the area during the wet (winter) season. During such periods, soils may become saturated and susceptible to landsliding and failure. Soil saturation occurs when a soil layer reaches the limit of its ability to absorb water by infiltration. All soils have such limits, which vary according to the physical soil properties. Sandy soils are generally the most effective in absorbing and draining water, while clay soils are the least effective. Soil saturation increases the potential for slope instability in two distinct ways. First, saturated soils are heavier and more fluid in nature and thus more susceptible to mass movement under the force of gravity. Second, once a soil is saturated, any additional water will not infiltrate, but rather flows over the surface as runoff. Excessive runoff greatly enhances the potential for slope failure, especially in concert with gravitational forces acting on a heavy, fluid soil layer. Many soils in the Planning Area are composed of sandy surface horizons overlying clayey subsoils. In periods of excessive precipitation, the normally well-drained surface layers can become saturated owing to the reduction of absorption potential in the underlying clay soils. That is, the clays can act as a barrier to percolating precipitation, thereby saturating the overlying sandy soils and generating surface runoff. This situation is also compounded by the energy associated with falling precipitation, which tends to break up the soil surface and can begin the downslope movement of material even before saturation occurs. In undisturbed areas, the presence of dense native vegetation tends to buffer the potential

impacts associated with excessive precipitation in two ways. Surface vegetation acts to intercept precipitation, thereby reducing both the amount and energy of water reaching the surface. The subsurface root systems reduce the potential for soil saturation and associated landsliding by directly absorbing water from the soil layer, and by physically binding the soil and reducing the potential for mass movement. Groundwater is generally absent from the steeply sloping upland regions of the project area, being restricted primarily to the flat-lying alluvial valleys (City of Escondido 1984a, 1984b). During wet periods, however, groundwater may be present in some upland regions in the form of springs or seeps. Such groundwater vents can impact significantly the stability of adjacent downslope areas, although the regional (Planning Area) effects on slope stability from groundwater are negligible.

Vegetation. Native vegetation communities in the Planning Area consist primarily of coastal sage scrub and chaparral, with minor grassland and wetland areas. Typical plant varieties include chamise, scrub oak, toyon, sage, buckwheat, deerwood, willow, cattail, and annual grasses and forbs. As described above, native vegetation serves to stabilize steep slopes in a number of ways and is an important factor in attaining slope equilibrium.

When vegetation is removed during development, the potential for slope instability is measurably increased. The effectiveness of native vegetation as a slope-stabilizing device is difficult to attain with standard reclamation methods. Most developed areas are landscaped with a low-diversity, aesthetically pleasing plant assemblage, which does not match the beneficial physical quantities of the native flora either above or below the surface. Additionally, many landscaped areas require (at least initially) significant irrigation, thereby increasing the potential for soil saturation runoff and erosion. Unlandscaped developed areas, which often include steep slopes associated with roadcuts, etc., also suffer an increase in potential slope instability, due to the time normally required for native vegetation to adequately reestablish.

B. FIRE AND TOXIC WASTE HAZARDS

1. URBAN FIRES

Urban fires have been discussed in Section IV.H.

2. WILDFIRE HAZARD

Areas of wildfire hazard correspond primarily to the unincorporated portions of the Planning Area. This is due directly to the proximity of natural brush, chaparral characteristics, rugged topography, and the lack of access to these areas. Those portions of the Planning Area considered as fire hazard areas are shown on Figure VII-2). These designated fire hazard areas, especially in the west and northwest portions of Escondido, extend beyond the Planning Area boundary. Although outside the General Plan area, these fire hazard areas pose a potential threat to contiguous portions of the Planning Area. As noted in Figure VII-2, four relatively large areas of proposed development (i.e., Palos Vista, Daley Ranch, Sager Ranch and Cloverdale Ranch) are located within a designated fire hazard area. These proposed projects, if developed, may warrant exclusion from the designated fire hazard area. They would, however, still remain partly or entirely surrounded by fire hazardous areas, an issue which should be addressed for each project area.

Wildfire hazard is particularly acute because of the prolonged late spring through fall dry period experienced in southern California, and the occurrence of Santa Ana winds beginning during the late summer and extending into early spring. These winds are seasonally warm and dry. When wind velocities in hillside areas are great, temperatures high, and relative humidity low, fire hazard conditions become severe, and fires are often difficult to extinguish. Efforts to extinguish fires under

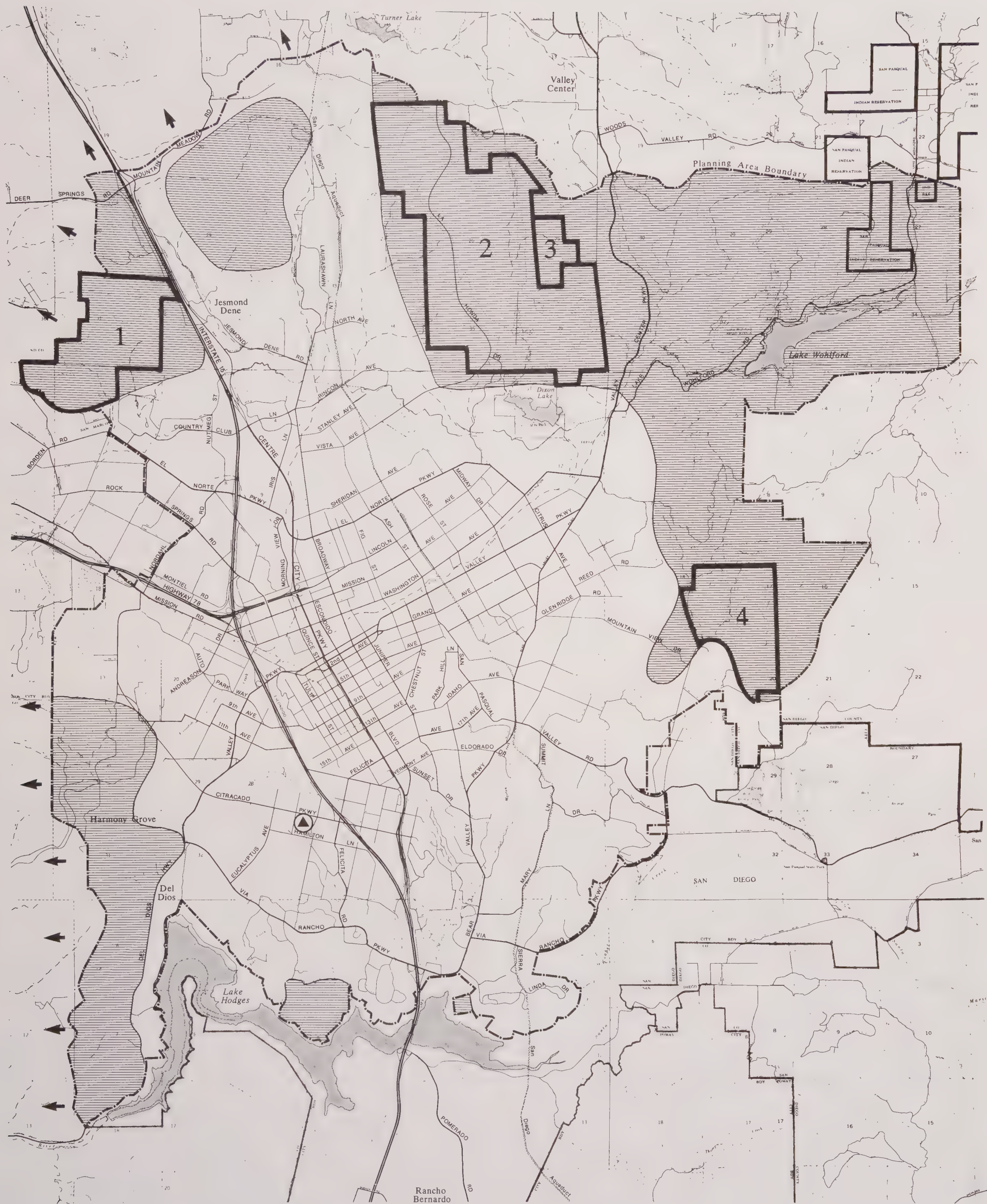


Figure VII-2 HAZARDS

Sources: City of Escondido, General Plan Safety Element, August 1975; City of Escondido Fire Department, April 1987.

such conditions may not be successful until there is a drop in wind velocity and a rise in temperature and relative humidity.

Other factors contribute to the relative fire risk of an area. Most important of these are fuel load and slope. Fuel load refers to the type and volume of plants. Volume is largely a factor of the number of years since the area last burned, the nature and timing of the previous winter rain, and intensity of grazing (if it occurred). Wildfire risk correlates strongly with the occurrence of hard and soft chaparral plant associations. The highest risk area is the hard chaparral plant association, which grows densely and contains shrubs which emit volatile oils when heated. The soft chaparral or coastal sage scrub association is rated as moderately hazardous because it is generally smaller, less densely spaced, and somewhat less volatile. Grasslands, which are rated as low hazard areas, burn easily and quickly, producing much less heat than chaparral fires.

Numerous grass and brush fires occur on the perimeter of Escondido each year. A 6-year summary of grass and brush fire occurrences in Escondido is shown in Table VII-1. In most cases, these fires are controlled quickly by the fast responses of numerous fire fighting authorities.

Table VII-1: GRASS AND BRUSH FIRE OCCURRENCE IN ESCONDIDO

<u>Year</u>	<u>Number of Grass and Brush Fires</u>
1981	86
1982	65
1983	64
1984	125
1985	79
1986	43

Source: Watts 1987.

The County of San Diego provides fire prevention measures (i.e., advisory measures) within unincorporated portions of the General Plan area. Fire suppression services are provided by the State of California Department of Forestry (CDF). The CDF provides wildland fire protection to all state responsibility lands, i.e., watershed areas in unincorporated areas. CDF also responds to structural fires when those fires pose a potential danger to state responsibility lands. The CDF maintains 18 stations in San Diego County. Stations in proximity to Escondido are located in Valley Center, San Marcos, and the Deer Springs area. Aircraft support is provided by the Ramona Air Attack Base located at Ramona Airport. Response time to this area is estimated at 10-12 minutes (Kelly 1987).

Aside from CDF's fire protection services, other means of support are provided. Some areas of the County are served by fire protection districts which overlap some CDF service areas. Additional air support is provided by Air Support to Regional Enforcement Agencies (ASTREA) through the County Sheriff's Department. In addition to its other capabilities, the Escondido Fire Department maintains special brush and grass units at all 5 stations. CDF provides for backup assistance through a Master Mutual Aide Agreement maintained with the fire protection districts and the cities within the County.

Areas exist within the unincorporated portions of the planning area which are not served by any fire protection agency. These areas consist of relatively small pockets outside the CDF and fire protection district service areas.

3. Manmade Hazards

Hazardous Waste and Contamination Hazards. Hazardous wastes, defined as substances, materials, or liquids which are left over or generated from chemical processes, are regulated by the California Department of Health Services (DOHS). The state's hazardous waste control laws (Health and Safety Code Sections 25100-25249) give the DOHS the authority to regulate the storage, transport, and disposal of specified types and amount of these wastes.

When contamination of soil or land by improperly handled hazardous waste occurs, the DOHS has the authority to designate a property as a "hazardous waste property" and lands within 2000 feet of the contaminated site as "border zone properties" (Health and Safety Code Section 251171.3). In cases of contaminated groundwater caused by hazardous waste leaking from contaminated soil, the Regional Water Quality Control Board (RWQCB) has the authority to compel actions to protect groundwater and surface water quality (Porter-Cologne Water Quality Act). Because of the close relationship between soil and groundwater contamination, these two agencies must coordinate their regulation and enforcement jurisdictions.

Contamination in Escondido. One property in Escondido, Chatham Brothers Barrel Yard, contains evidence of hazardous waste contamination and is a California Superfund Listed Property. The Chatham site poses potential health risks from the presence of significant levels of volatile organic compounds, heavy metals, phthalates, and polychlorinated biphenyls (PCBs).

The Chatham Superfund property is located in the southwestern portion of Escondido (Figure VII-2). The property is nearly level with a 20-foot drop in elevation from north to south across the property. The lot is undeveloped and contains only an occasional citrus tree. An intermittent creek develops 0.2 miles down gradient of the site, flowing through Felicita Park toward Lake Hodges.

From before World War II until 1981, the Chathams were responsible for petroleum distribution as well as reclamation of kerosene, hydraulic oil, trichloroethylene, perchlorethylene, and trichloroethane on the site. The Chathams received or generated hazardous materials, including chlorinated and aromatic solvents, tank parts, waste oils, sludges, and transformer fluids. The volatile organic compounds which contaminate the site originated in the solvents. The heavy sludges contained persistent heavy metals while PCBs were constituents in the transformer fluids. These substances can pose serious health risks to humans by ingestion, inhalation, or physical contact. Soil and groundwater are well known media for contaminant migration, which can occur with air transport, surface runoff, or ground-water flow. A field study implemented by the California DOHS in 1982 resulted in measurements of these hazardous substances sufficient to rank the site on the California State Priorities List. State funds were then allocated for investigative and remedial measures.

The air transport of contaminants would involve volatile organic vapors. Of the investigations conducted thus far, no short-term risk to humans from inhalation of volatile organic compounds appears to exist on the Chatham site. The danger of long-term health impacts to humans by inhalation of volatile organic vapors, derived from volatile organic compounds (VOCs) in deeper soil, has yet to be established on or near the Chatham site.

Shown in Table VII-2 are the various contaminants found on the Chatham site, their concentration in soil and ground water, and the federal standard for drinking water given by the Department of Toxic Substances and Disease Registry at the Center for Disease Control in Atlanta, Georgia. The concentrations given are those values found on the Chatham site. The extent of offsite contamination will not be known until future offsite testing is conducted.

Table VII-2: Maximum Observed Concentrations of Some Major Contaminants

<u>Contaminant Species</u>	<u>Soils (mg/kg)</u>	<u>Ground Water (µg/l)</u>	<u>EPA Drinking Water Standards*</u>
1-2-dichloroethane	0.053	1,000.0	5 ppb
1-1-dichloroethane	2.2	290.0	N.E.
Trans-1-2-dichloroethene	71.0	3500.0	70 ppb
Tetrachloroethene	140.0	720.0	3-5 ppb
Trichloroethene	3.6	1,300.0	5 ppb
Bis (2-ethylhexyl) phthalate	2,400.0	----	4 ppm
Chromium (total)	5,800.0	30.0	50 ppb
Total Iron	----	8,900.0	0.3 ppm
Ferrous Iron	----	1,100.0	N.E.
Lead	3,400.0	----	20-50 ppb
Methylene chloride	0.15	18.0	N.E.
Barium	1,000.0	200.0	1 ppb
Nickel	230	0.90	N.E.
Zinc	15,000.0	60.0	5 ppm
PCB	270.0	----	N.E.

mg/kg = milligrams/kilogram

µg/l = micrograms/liter

ppm = parts per million

ppb = parts per billion

--- = not detected

N.E. = not established

*EPA standards, recommended standards and proposed recommended standards for drinking water in a public water system (i.e., not enforceable for private wells but used here as a reference).

Source: Tetra Tech, 1986

sheeting over highly contaminated soils to prevent precipitation from making contact with the contaminated soil, and the construction of soil berms to catch runoff from the site. Subsequent to completion of the DOHS investigation, a cleanup strategy will be initiated.

C. GEOLOGIC HAZARDS

The Planning Area is within a seismically active area subject to impacts from major regional faults. The most significant of these are the Elsinore and San Jacinto fault zones, located approximately 15 and 40 miles northeast of the Planning Area, respectively. As discussed in Section V.B, these are both active fault systems that have produced major historic seismic events and measurable displacement. Also of regional significance are the San Andreas fault, an active system approximately 65 miles northeast of the project area, and the potentially active Rose Canyon fault located approximately 20 miles to the southwest. Active faults are those which exhibit displacement during the last 10,000 years (Holocene), while potentially active faults display evidence of displacement from 10,000 to 2 million years ago (Pleistocene). A number of small local faults occur in the vicinity of Escondido with two inferred fault traces crossing into the southwestern portion of the project area (Figure V-3). Because none of these faults exceeds 5 miles in length or is directly related to larger fault systems, they are not likely to present significant seismic hazards beyond their immediate traces. Potential impacts to the Escondido Planning Area from these faults would thus be limited to the 2 inferred fault traces, for which no evidence of displacement or recurrence intervals is known.

Projected seismically-induced impacts are evaluated on the basis of maximum credible and maximum probable earthquakes as defined below.

- The maximum credible earthquake for a particular fault is the largest magnitude event that appears capable of occurring under the presently known tectonic framework.
- The maximum probable earthquake is the maximum earthquake likely to occur during a 100-year interval. It is regarded as a probable occurrence, not as an assured event that will occur at a specific time (City of Escondido 1984a).

Following is a summary of potential seismically induced impacts including ground rupture and shaking, liquefaction and dynamic settlement, landsliding, and tsunamis and seiches.

Ground Rupture and Shaking. Ground rupture results from surface displacement (horizontal and/or vertical) associated with active fault movement. It is normally located along the actual fault trace, but can occur anywhere within a fault zone. Ground rupture is irregular and does not occur during every fault movement, although its likelihood generally increases with earthquake magnitude. As there are no known active fault zones within the Planning Area, the potential for ground rupture is considered small. Surface displacement is a possibility along the 2 inferred fault traces in the project area, although there is no known evidence to support Holocene, or even Pleistocene movement in these faults.

Earthquake movement releases energy in the form of shock waves which travel through the earth itself. These waves radiate out from the quake epicenter and are expressed as a shaking motion at the surface. Groundshaking is the most widespread impact from seismic events, often producing significant damage many miles from the epicenter point. Regional groundshaking (along with the associated localized effects described below) is the most likely adverse impact to occur in the project area during a major seismic event. Tables VII-3 and VII-4 show potential effects of groundshaking associated with maximum credible and probable earthquakes.

Table VII-3: Estimated Potential Ground Shaking Effects

<u>Earthquake Event</u>	<u>Fault</u>	<u>Estimated Richter Scale Magnitude</u>	<u>Distance to Project Area (Miles)</u>	<u>Peak Ground Acceleration (g)</u>	<u>Significant Duration (Seconds)</u>	<u>Mercalli Scale Intensity</u>
Maximum Credible	Elsinore	7.0	15	0.27	24	VIII
	Rose Canyon	7.0	20	0.21	22	VIII
	San Jacinto	7.5	40	0.14	18	VII
	San Andreas	7.5	65	0.07	5	VII
Maximum Probable (100-year recurrence interval)	Elsinore	6.5	15	0.19	15	VIII
	Rose Canyon	6.5	20	0.15	12	VII
	San Jacinto	6.5	40	0.07	8	VII
	San Andreas	7.5	65	0.07	5	VII

Adapted from City of Escondido 1984a (Cloverdale)

Table VII-4: The Modified Mercalli Scale of Earthquake Intensities

<i>If most of these effects are observed</i>	<i>then the intensity is:</i>	<i>If most of these effects are observed</i>	<i>then the intensity is:</i>
Earthquake shaking not felt. But people may observe marginal effects of large distance earthquakes without identifying these effects as earthquake-caused. Among them: trees, structures, liquids, bodies of water sway slowly, or doors swing slowly.	I	<i>Effect on people:</i> Difficult to stand. Shaking noticed by auto drivers.	VIII
<i>Effect on people:</i> Shaking felt by those at rest, especially if they are indoors, and by those on upper floors.	II	<i>Other effects:</i> Waves on ponds; water turbid with mud. Small slides and caving in along sand or gravel banks. Large bells ring. Furniture broken. Hanging objects quiver.	
<i>Effect on people:</i> Felt by most people indoors. Some can estimate duration of shaking. But many may not recognize shaking of building as caused by an earthquake; the shaking is like that caused by the passing of light trucks.	III	<i>Structural effects:</i> Masonry D* heavily damaged; Masonry C* damaged, partially collapses in some cases; some damage to Masonry B*; none to Masonry A*. Stucco and some masonry walls fall. Chimneys, factory stacks, monuments, towers, elevated tanks twist or fall. Frame houses moved on foundations if not bolted down; loose panel walls thrown out. Decayed piling broken off.	
<i>Other effects:</i> Hanging objects swing.	IV	<i>Effect on people:</i> General fright. People thrown to ground.	IX
<i>Structural effects:</i> Windows or doors rattle. Wooden walls and frames creak.		<i>Other effects:</i> Changes in flow or temperature of springs and wells. Cracks in wet ground and, on steep slopes. Steering of autos affected. Branches broken from trees.	
<i>Effect on people:</i> Felt by everyone indoors. Many estimate duration of shaking. But they still may not recognize it as caused by an earthquake. The shaking is like that caused by the passing of heavy trucks, though sometimes, instead, people may feel the sensation of a jolt, as if a heavy ball had struck the walls.	V	<i>Structural effects:</i> Masonry D* destroyed; Masonry C* heavily damaged, sometimes with complete collapse; Masonry B* is seriously damaged. General damage to foundations. Frame structures, if not bolted, shifted off foundations. Frames racked. Reservoirs seriously damaged. Underground pipes broken.	
<i>Other effects:</i> Hanging objects swing. Standing autos rock. Crockery clashes, dishes rattle or glasses clink.	VI	<i>Effect on people:</i> General Panic.	X
<i>Structural effects:</i> Doors close, open or swing. Windows rattle.		<i>Other effects:</i> Conspicuous cracks in ground. In areas of soft ground, sand is ejected through holes and piles up into a small crater, and, in muddy areas, water fountains are formed.	
<i>Effect on people:</i> Felt by everyone indoors and by most people outdoors. Many now estimate not only the duration of shaking but also its direction and have no doubt as to its cause. Sleepers awakened.		<i>Structural effects:</i> Most masonry and frame structures destroyed along with their foundations. Some well-built wooden structures and bridges destroyed. Serious damage to dams, dikes and embankments. Railroads bent slightly.	
<i>Other effects:</i> Hanging objects swing. Shutters or pictures move. Pendulum clocks stop, start or change rate. Standing autos rock. Crockery clashes, dishes rattle or glasses clink. Liquids disturbed, some spilled. Small unstable objects displaced or upset.	VII	<i>Effect on people:</i> General panic.	XI
<i>Structural effects:</i> Weak plaster and Masonry D* crack. Windows break. Doors close, open or swing.		<i>Other effects:</i> Large landslides. Water thrown on banks of canals, rivers, lakes, etc. Sand and mud shifted horizontally on beaches and flat land.	
<i>Effect on people:</i> Felt by everyone. Many are frightened and run outdoors. People walk unsteadily.		<i>Structural effects:</i> General destruction of buildings. Underground pipelines completely out of service. Railroads bent greatly.	
<i>Other effects:</i> Small church or school bells ring. Pictures thrown off walls, knicknacks and books off shelves. Dishes or glasses broken. Furniture moved or overturned. Trees, bushes shaken visibly, or heard to rustle.	VII	<i>Effect on people:</i> General panic.	XII
<i>Structural effects:</i> Masonry D* damaged; some cracks in Masonry C*. Weak chimneys break at roof line. Plaster, loose bricks, stones, tiles, cornices, unbraced parapets and architectural ornaments fall. Concrete irrigation ditches damaged.		<i>Other effects:</i> Same as for Intensity X.	
		<i>Structural effects:</i> Damage nearly total, the ultimate catastrophe.	
		<i>Other effects:</i> Large rock masses displaced. Lines of sight and level distorted. Objects thrown into air.	
		* Masonry A: Good workmanship and mortar, reinforced, designed to resist lateral forces.	
		* Masonry B: Good workmanship and mortar, reinforced.	
		* Masonry C: Good workmanship and mortar, unreinforced.	
		* Masonry D: Poor workmanship and mortar and weak materials, like adobe.	

Liquefaction and Dynamic Settlement. Liquefaction and dynamic settlement of soils can be caused by the strong vibratory motion associated with seismically induced groundshaking. Research and historical data indicate that loose, granular soils are most susceptible to these effects, while the stability of clayey soils is less adversely affected. Borchardt and Kennedy (1979) state that materials with less than 15 percent clay should be considered subject to liquefaction, with the potential for adverse effects increasing directly with declining clay content. Among granular soils, finer textured materials are more susceptible to liquefaction than coarse-grained types, and soils of uniform grain size are more likely to liquefy than well-graded materials (Seed and Idriss 1970). Liquefaction is known to be generally restricted to saturated or near-saturated soils of depths shallower than about 100 feet, and to require intense groundshaking of significant duration (greater than 0.13 g with a duration exceeding 45 seconds [City of Escondido 1975b]). Dynamic settlement (or subsidence) related to seismic activity generally occurs in areas of loosely consolidated soils and bedrock. Vibratory motion associated with seismic groundshaking serves to condense these materials by reducing interstitial pore space. The resultant loss of volume is represented at the surface as ground subsidence or settlement.

Evaluation of soils and seismic conditions in the Escondido Planning Area indicates a generally low potential for liquefaction and dynamic settlement. Project area soils generally consist of sandy loams with clayey substrata, and contain a relatively high percentage of clay- and silt-size particles. These tend to bind the sandy materials into a more massive structure and reduce the potential for liquefaction. Exceptions include a number of low lying, fine-grained, granular soils which lack clay substrata, including the Escondido, Grangeville, and Reiff Series. All of these are loamy soils, however, whose graded nature tends to provide a massive dense structure and lower the potential for liquefaction. A somewhat higher potential for liquefaction exists in areas exposing sandy alluvial deposits such as drainage courses. These materials generally lack the clay content of adjacent topsoils, and often incorporate areas of fine-grained, poorly graded granular deposits subject to liquefaction. The dense and shallow nature of project area soil cover, combined with hard, competent underlying bedrock results in a generally low potential for dynamic settlement. As with liquefaction, this potential likely varies laterally somewhat with changing soil conditions.

Landslides. Seismically induced landsliding is a function of the vibratory motion associated with groundshaking, which increases the potential for mass movement on slopes. The degree of impact from seismic activity depends on a number of factors, including earthquake magnitude intensity and duration, as well as natural slope stability. As shown in Tables VII-2 and VII-4, the projected magnitude, intensity, and duration associated with maximum credible seismic events in the project area are not sufficient to produce significant landslides. This is a preliminary assessment subject to data modification, and does not represent an absolute delineation of maximum potential impacts. Seismic effects would not, however, be expected to significantly exceed these projections. Considering the currently stable condition of most sloped areas in the Escondido region, (Section VII-A), a generally low potential exists for seismically-induced landsliding effects. This would increase locally wherever slope conditions are less stable, particularly in developed areas where the conditions of natural slope equilibrium have been altered. Of particular interest is the site of the only known landslide in the Planning Area, northwest of Lake Wohlford (Figure V-2 and Section VII-A). This occurred at a steep roadcut in materials which became subject to mass movement after exposure. Seismically-induced groundshaking at levels projected for maximum credible and probable earthquakes could reactivate this site and cause additional landsliding.

Tsunamis and Seiches. Earthquake-induced tsunamis and seiches are the result of seismic waves producing massive wave-like or oscillatory movement in large bodies of water. The Planning Area is not subject to effects from tsunamis or massive ocean waves (commonly referred to as tidal waves), due to its distance from the coast and elevation above sea level. Seiches in lakes Dixon, Wohlford, and Hodges could result in a breach or spill at one or more of the associated dams. In such a case, floodwaters from Lake Hodges would likely not enter the project area while moving down the San

down the San Dieguito River Channel. Potential flooding impacts associated with Lakes Dixon and Wohlford are discussed in Section VII-E of this report.

D. FLOOD PLAINS

Escondido has been subject to several damaging flood episodes during its history. Two major storms struck in January 1916, which left 18 inches of rain in 10 days and created severe damage throughout the area. In February 1927, over 14 inches of precipitation fell in 6 days, causing widespread flooding and extreme damage to bridges and roads. The most recent major flood episode occurred in 1969, when almost 14 inches of rain fell during January and February, creating heavy runoff and associated flooding; however, the City's improved flood control channel and storm drain system prevented major flooding.

Flooding occurs when a temporary rise in stream flow results in the over-topping of banks and inundation of areas adjacent to the channel. The area subject to inundation is referred to as the flood plain. Factors affecting the size and frequency of floods include amount and distribution of rainfall, previous moisture conditions, frequency of wildfires on the watershed, and channel conditions. The amount of damage incurred during a flood depends on the depth of the flood, velocity of flow, rate of rise and the duration of flooding.

Major flood control improvements were initiated in 1965 when the City, with aid from the Soil Conservation Service (SCS), began construction of a major flood control channel to contain the two major water courses of Escondido and Reidy creeks. Escondido Creek has since been fully improved as a concrete-lined channel from the east to the west City limits and is designed to contain a 100-year flood. An improved channel for Reidy Creek, one which would contain a 100-year flood, extends downstream of Lincoln Avenue (near Highway 78) and continues south to its confluence with Escondido Creek. Between Lincoln Avenue and Center City Parkway, a 100-year flood for Reidy Creek would be contained within an environmental channel maintained by the City.

Encroachment is permitted within what is referred to as the Floodway Fringe (Figure VII-3), i.e., that area in which encroachment would raise the flood level a total of 1 foot or less. In order to develop in this designated area, the lowest floor elevation must be 1 foot above the highest flood elevation. Development is prohibited within the floodway, unless encroachments do not obstruct flow and would not result in an increase in flood levels.

The City of Escondido is a participant in the National Flood Insurance Administration program through the Federal Emergency Management Agency (FEMA), which provides federal flood insurance subsidies and federally financed loans for property owners in flood-prone areas. In order to qualify for federal flood insurance, the City must identify flood hazard areas and develop and implement a system of protective controls. The City, in conjunction with the County and the Army Corp of Engineers, conducted studies which resulted in the development of Flood Insurance Rate Maps and subsequent flood risk zones for insurance. The identified 100-year flood hazard areas for Escondido are shown in Figure V-6. Existing flood hazard conditions are primarily the result of insufficient drainage facilities to carry stormwater runoff to the appropriate channels.

Insurance coverage is mandatory within the 100-year floodplain only if land is purchased under Federal loans through the Federal Housing Administration (FHA) or the Veterans Administration (VA). The County of San Diego also participates in the National Flood Insurance administration program. Federal flood insurance is, therefore, available in the unincorporated portions of the General Plan area.

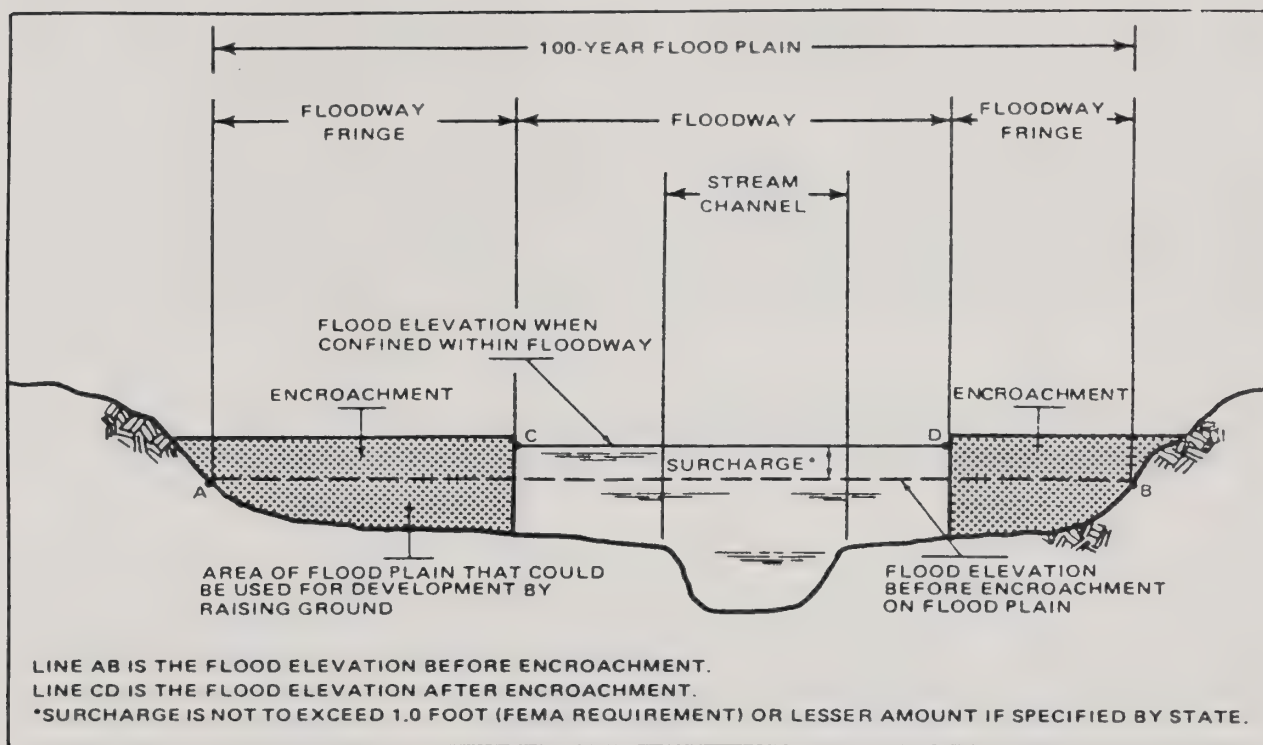


Figure VII-3 FLOODWAY SCHEMATIC

Source: Federal Emergency Management Agency, 1986.

There are three major drainage plans which have been developed to rectify existing flood conditions:

- City of Escondido, Design Report, Storm Drainage Facilities.
- San Diego County Flood Control District, Comprehensive Plan for Flood Control and Drainage, Zone 1.
- City of Escondido, Storm Drain Basin Plan.

The Design Report, Storm Drainage Facilities produced by the City of Escondido in 1967 provides the design of the drainage collection system in conjunction with the Escondido Creek Flood Control Project (City of Escondido 1967). The Design Report was produced in an effort to gain federally funded support for the improvements; due to changes in the federal program, however, money was not provided for the drainage system project.

The 1976 Comprehensive Flood Control and Drainage Plan (Zone 1) is the County's effort to establish an improvement plan for localized drainage problems within the unincorporated areas. This plan was adopted so that a fee structure could be developed and assessed against new development.

The Storm Drain Basin Plan is the City's latest effort to rectify existing flood conditions. Areas within the City's jurisdiction have significant drainage problems. These problems are normally localized conditions which, due to local topographic features, concentrate the problem within a specific drainage basin. By utilizing the Storm Drainage Facilities Design Report, the County's Comprehensive Flood Control and Drainage Plan, and other resources, the City has identified these problem drainage basins in an effort to correct inefficient drainage facilities. In addition, the County Plan with its identified storm drain basins has been incorporated within annexed areas of the City. The City's drainage system and associated improvement plans will be further discussed in Section X.C.

Funding for the construction of basin-wide storm drain improvements to mitigate outstanding drainage problems has been established through a drainage basin fee program adopted by the City to be assessed against new development. The fees will be collected only as properties are developed. As basins are adopted by the City Council, efforts are and will be made to have other associated jurisdictions also adopt the basin(s) and respective fee(s).

E. DAM FAILURE HAZARD

Escondido's water reserves are stored behind two dams, Wohlford Dam and Dixon Dam. Wohlford Dam was constructed in 1895 by the Escondido Irrigation District, which has now become the Escondido Mutual Water Company. The 76-foot high rock-fill dam was over-topped in 1916 (damage was negligible) and subsequently raised to an elevation of 100 feet by the addition of a hydraulic fill section upstream of the original rock fill embankment. The 6,943 acre-foot capacity of Lake Wohlford provides water storage for the City of Escondido and also for the Vista Irrigation District. Lake Wohlford is filled primarily by means of a diversion canal (the Escondido Canal) from the San Luis Rey River, with minor contributions from local runoff. The water is then released for treatment at the Dixon Filtration Plant. After treatment at the filtration plant, water is distributed to the City of Escondido and to the City of Vista, which receives approximately 50 percent of the supply.

Dixon Dam and its associated reservoir is owned by and stores water exclusively for the City of Escondido. The dam, constructed in 1970 as a rock-fill dam, impounds water purchased from the San Diego County Water Authority. Water is received via the First San Diego Aqueduct and the cross connection of the Second San Diego Aqueduct. It is held in Dixon Reservoir until treatment at the Dixon Filtration Plant (located adjacent to the reservoir) and subsequent distribution. The reservoir

has a maximum capacity of 2,606 acre-feet. No significant runoff occurs within the watershed of Dixon Reservoir, and local runoff is therefore not considered a factor in the City's water production. Both dams retain sufficiently large quantities of water to present a major threat to life and property in the event of dam failure.

Among the potential forms of failure for both Wohlford and Dixon Dam are those resulting from seismic activity, over-topping of the dam, subterranean erosion of the dam, and failure of the outflow pipe or safety gates in the intake tower. The most probable type of failure to either dam that could involve a sudden release of water would involve a major or severe earthquake. Such a failure would be signaled by increased seepage of turbid water below the dam.

Both Wohlford and Dixon dams are located favorably with reference to known major faults, and earthquake forces and motions would be less severe than for many other dams located in California. At either location, the maximum earthquake force expected under the most severe condition would be approximately 8 to 10 percent of gravity originating chiefly from the Elsinore, San Jacinto, or San Andreas faults. The equivalent horizontal earthquake force required to induce failure would be roughly 15 percent of gravity (City of Escondido 1969). It therefore appears that Wohlford Dam and Dixon Dam are safe and will remain safe during the earthquakes that are probable within the life of the structures.

The dams are inspected and monitored weekly and after every seismic event. The monitoring program consists of a survey of dam bench marks (27 on Wohlford Dam and 8 on Dixon Dam) to monitor stability of the dam structures and a survey of open well piezometers (23 in Wohlford Dam and 6 in Dixon Dam) to obtain a representative measurement of water level within the dam core. This instrumentation and inspection program is designed as an early warning system. In an emergency, both reservoirs can be emptied by releasing water via the emergency spillways into Escondido Creek; however, the threat to life and property would not be immediately alleviated. For Lake Wohlford, it would take 5 days for danger to be reasonably removed. At that time, a safe water level would be achieved. Approximately 4,000 acre feet of water would be contained below the level of the original rock fill dam, which is considered a more secure structure. Dixon Reservoir would be completely drained and danger alleviated after 5 days .

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VIII. CLIMATOLOGY/AIR QUALITY

A. CLIMATOLOGY

The climate of the Escondido area and all of San Diego County is dominated by the semi-permanent Pacific high pressure cell located over the Pacific Ocean. This high pressure cell drives the dominant onshore circulation, maintaining clear skies for much of the year. Escondido summers are typically warm and dry, while winters are mild with occasional rainy periods. The mean temperature is 61.8°F, and the mean maximum and mean minimum temperatures are 76°F and 47.4°F, respectively. Precipitation averages 16 inches annually, and falls almost exclusively between November and April (University of California 1970).

The Pacific high pressure system influences the development of two types of temperature inversions, subsidence inversions, and radiation inversions. These systems act to degrade local air quality. Subsidence inversions occur during the warmer months as descending air associated with the Pacific high pressure cell comes into contact with cool marine air. The boundary between the two layers of air represents a temperature inversion which traps pollutants. The radiation inversion develops on winter nights when air near the ground cools by heat radiation and air aloft remains warm. The shallow inversion layer formed between these two air masses can trap vehicular pollutants such as carbon monoxide and oxides of nitrogen. As the pollutants become more concentrated in the atmosphere, photochemical reactions occur that produce oxidants, commonly known as smog.

The predominant feature of the Escondido wind climate is the sea-breeze/land-breeze cycle. During the daytime, particularly in the summer, onshore winds move inland across Escondido with speeds of 7 to 10 miles per hour (mph). Easterly land breezes of 2 to 4 mph often occur at night. In the Escondido area, the influence of this cycle is modified by surrounding rugged terrain, which induces turbulence into the air flows. In addition, this cycle is periodically affected by continental air flows which dominate weather patterns. The most widely recognized of these are the Santa Ana conditions, during which strong, hot, dry easterly winds prevail for 2- or 3-day periods.

B. AIR QUALITY

1. REGULATORY FRAMEWORK

Ambient Air Quality Standards (AAQS) represent the maximum level of background pollution considered safe, with an adequate margin of safety, to protect the public health and welfare. The five primary pollutants of concern for which standards have been established are sulfur dioxide, carbon monoxide, nitrogen oxides, ozone, and suspended particulate matter. National Ambient Air Quality Standards (NAAQS) were set by the Federal Clean Air Act of 1970, as amended in 1977, with states retaining the option to develop different (more strict) standards. Because of unique air quality problems in California, the California Air Resources Board (ARB) has developed additional AAQS. Figure VIII-1 lists the currently applicable state and federal standards. In San Diego County, it is the responsibility of the Air Pollution Control District (APCD) to ensure that state and national air quality standards are achieved.

APCD's current air quality plan, the 1982 State Implementation Plan (SIP) Revisions, documents the necessary overall strategy and individual tactics by which the San Diego air basin can meet its attainment goal. The SIP Revisions state that, if necessary, emission reductions are enacted and, if regional growth does not exceed anticipated levels, the basin will no longer experience unhealthful air quality resulting from emissions generated in the basin. The SIP Revisions used the San Diego Association of Governments (SANDAG) Series V growth forecasts to project regional growth and to develop Regional Air Quality Strategy (RAQS) standards. The more recent Series VI growth

POLLUTANT	AVERAGING TIME	CALIFORNIA STANDARDS		NATIONAL STANDARDS		
		CONCENTRATION	METHOD	PRIMARY	SECONDARY	METHOD
OXIDANT	1 HOUR	0.10 ppm (200 ug/m ³)	ULTRAVIOLET PHOTOMETRY	—	—	—
OZONE	1 HOUR	—	—	240 ug/m ³ (0.12 ppm)	SAME AS PRIMARY STANDARDS	CHEMILUMINESCENT METHOD
CARBON MONOXIDE	8 HOUR	9 ppm (10 mg/m ³)	NON- DISPERSIVE INFRARED SPECTRO- SCOPY	10 mg/m ³ (9 ppm)	SAME AS PRIMARY STANDARDS	NON-DISPERSIVE INFRARED SPECTROSCOPY
	1 HOUR	20 ppm (23 mg/m ³)		40 mg/m ³ (35 ppm)		
NITROGEN DIOXIDE	ANNUAL AVERAGE	—	SALTZMAN METHOD	100 ug/m ³ (0.05 ppm)	SAME AS PRIMARY STANDARDS	GAS PHASE CHEMILUMIN- ESCENCE
	1 HOUR	0.25 ppm (470 ug/m ³)		—		
SULFUR DIOXIDE	ANNUAL AVERAGE	—	CONDUCT- TIMETRIC METHOD	80 ug/m ³ (0.03 ppm)	—	PARAOSANILINE METHOD
	24 HOUR	0.05 ppm (131 ug/m ³)		365 ug/m ³ (0.14 ppm)	—	
	3 HOUR	—		—	1300 ug/m ³ (0.5 ppm)	
	1 HOUR	0.25 ppm (655 ug/m ³)		—	—	
SUSPENDED PARTICULATE MATTER	ANNUAL GEOMETRIC MEAN	PM - 10 30 ug/m ³	HIGH VOLUME SAMPLING	TSP 75 ug/m ³	60 ug/m ³	HIGH VOLUME SAMPLING
	24 HOUR	PM - 10 50 ug/m ³		TSP 260 ug/m ³	150 ug/m ³	
SULFATES	24 HOUR	25 ug/m ³	AIHL METHOD NO. 61	—	—	—
LEAD	30 DAY AVERAGE	1.5 ug/m ³	AIHL METHOD NO. 54	—	—	—
	CALENDAR QUARTER	—	—	1.5 ug/m ³	1.5 ug/m ³	ATOMIC ABSORPTION
HYDROGEN SULFIDE	1 HOUR	0.03 ppm (42 ug/m ³)	CADMIUM HYDROXIDE STRACTAN METHOD	—	—	—
VINYL CHLORIDE (CHLOROETHENE)	24 HOUR	0.010 ppm (26 ug/m ³)	GAS CHROMA- TOGRAPHY	—	—	—
ETHYLENE	8 HOUR	0.1 ppm	—	—	—	—
	1 HOUR	0.5 ppm				
VISIBILITY REDUCING PARTICLES	ONE OBSER- VATION	IN SUFFICIENT AMOUNT TO REDUCE THE PREVAILING VISIBILITY TO LESS THAN 10 MILES WHEN THE RELATIVE HUMIDITY IS LESS THAN 70%		—	—	—

ppm - PARTS PER MILLION
ug/m³ - MICROGRAMS PER CUBIC METER
mg/m³ - MILLIGRAMS PER CUBIC METER

Figure VIII-1 CALIFORNIA AND FEDERAL
AMBIENT AIR QUALITY STANDARDS

forecasts by SANDAG have been used to monitor the progress with which the region is attaining the 1982 SIP standards.

2. Existing Conditions

Air quality at a given location is a function of several factors, including the amount and type of pollutants being emitted into the air, both locally and throughout the basin, and the dispersion rates of pollutants within the region. The major factors affecting pollutant dispersion are wind speed and direction, the vertical dispersion of pollutants (which is affected by inversions), and the local topography.

Escondido lies within the regional unit designated as the San Diego Air Basin (SDAB). Air quality is monitored by the APCD and the ARB at a series of stations within SDAB (Figure VIII-2). The Escondido monitoring station is centrally located within the planning area. Air quality data recorded at the Escondido station from 1981 through 1985 are summarized in Table VIII-1.

The San Diego region has attained standards for sulfur dioxide, nitrogen, and lead (APCD 1986). State and federal standards for ozone have not been attained throughout the SDAB, and, as indicated in Table VIII-1, standards are exceeded occasionally in Escondido. Ozone results not only from local emissions within the SDAB, but also from transported pollution from other areas, principally the South Coast Air Basin (e.g., the Los Angeles area). In fact, the highest ozone concentrations are those that are transported in from the South Coast Air Basin (APCS 1986).

The western two-thirds of the SDAB is designated as a non-attainment area for carbon monoxide (CO) and particulates (dust, soot, organic matter, and various sulfur, nitrogen and metallic compounds). The SDAB only marginally maintains CO standards, and Escondido has exceeded the 8-hour standards for CO 3 days in the last 5 years (1981, 1982, and 1985).

As previously mentioned, SANDAG Series VI growth forecasts have been used to monitor the progress of regional attainment of 1982 SIP standards. The forecasted growth is not expected to interfere with the attainment of ozone standards by 1987, or to cause a violation of CO standards (APCD 1986). Particulate standards are currently being revised to a more appropriate health-related scale by the Environmental Protection Agency (EPA); attainment of those standards cannot be accurately forecast.

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LEGEND

- Gaseous pollutant or multipollutant monitoring site
- Particulate sampling only
- ⊕ ARB operated site
- * Discontinued during year
- † Site relocated

Figure VIII-2 SAN DIEGO AIR BASIN

SOURCE: California Air Resources Board



Table VIII-1: Ambient Air Quality Summary, Escondido Monitoring Station

Pollutant	Average Time	California Air Quality Standards	Federal Primary Standards	1981	Maximum 1 hr Concentrations (ppm)				Number of Days Exceeding State Standard				
					1982	1983	1984	1985	1981	1982	1983	1984	1985
Oxidants (Ozone)	1 hr	0.10 ppm	0.12 ppm	0.19	0.22	0.20	0.24	0.17	52	47	60	57	43
Carbon Monoxide	8 hrs/ 1 hr	9 ppm 20 ppm	9 ppm 35 ppm	11.3* ---	10.3* 15.0	8.9* 14.0	7.6* 16.0	9.8* 16.0	1 ---	1 0	0 0	0 0	1 0
Nitrogen Dioxide	1 hr	0.25 ppm	---	0.17	0.18	0.17	0.14	0.14	0	0	0	0	0
Sulfur Dioxide	1 hr	0.25 ppm	---	0.05	0.04	0.03	0.02	0.03	0	0	0	0	0
Total Suspended Particulates	24 hrs	---	260µg/m ³	122**	127**	147**	142**	120**	---	---	---	---	---

* = Mean 8-hour sample (in ppm)

** = Maximum 24-hour sample (in µg/m³)

ppm = Parts per million

µg/m³ = Micrograms per cubic meter

--- = No data available/not applicable

Source: California Air Resources Board, 1981, 1982, 1983, 1984, 1985, Summary of Air Quality Data

IX. NOISE

Definitions of the two technical terms used in this section of the report are as follows:

Community Noise Equivalent Level (CNEL). A description for the 24-hour A-weighted average noise level. The CNEL concept accounts for the increased acoustical sensitivity of people to noise during the evening and nighttime hours. Sound levels during the hours from 7 p.m. to 10 p.m. are penalized 5 dB; sound levels during the hours from 10 p.m. to 7 a.m. are penalized 10 dB. A 10 dB increase in sound level is perceived by people to be twice as loud.

Leq. The equivalent steady-state A-weighted sound level that, in a stated period of time, would contain the same acoustic energy as the time-varying sound level during the same period.

For additional information regarding the fundamental concepts of noise, see Appendix A.

A. EXISTING NOISE LEVELS

1. Highways, Freeways, and Major Local Streets

Figures IX-1, IX-1(A), and IX-1(B) show the areas of Escondido that are now exposed to a CNEL of 60 dB or greater due to traffic noise. This information was developed using the Federal Highway Administration's Traffic Noise Prediction Model. In the calculation of these noise levels, no shielding from local terrain or existing buildings was assumed, i.e., these are "worst-case" noise levels.

A series of noise measurements were made in conjunction with this study. The measurements were either short-term or 24 hours long. Most of the measurements were made on empty lots with no existing development, at setbacks similar to those of nearby developments. The results of these noise measurements are summarized in Table IX-1 and Table IX-2.

2. Railroad Operations

The Santa Fe Railroad Company serves the industrial district with a spur that ends in Escondido. The railroad right-of-way is bounded completely by industrial uses at the present time. The railroad operates 1 round-trip daily, 3 days a week. The level of service has decreased since the last General Plan update. Noise contours for this railroad would indicate the CNEL of 60 dB contour to be well within the railroad right-of-way.

3. Aircraft Operations

The Palomar Memorial Hospital is designated as a trauma center and currently has an emergency helipad. This allows patients to be flown in or out of the hospital by helicopter. Use of this helipad is infrequent, averaging roughly 1 flight per day. Noise from these helicopter flights affects the surrounding commercial and residential areas. Since helicopter operations are infrequent, they do not affect the average 24-hour sound level (CNEL). However, high noise levels during these helicopter operations may annoy some residents and disrupt commercial activities.

There is a very small private landing strip operated at the Lake Wohlford Resort. Air traffic consists of approximately 10 to 15 landings per week, and because of its length and location on a mesa, it is generally restricted to single-engine light aircraft of less than 200 hp. Noise contours have not been mapped for this facility due to its insignificance. The landing

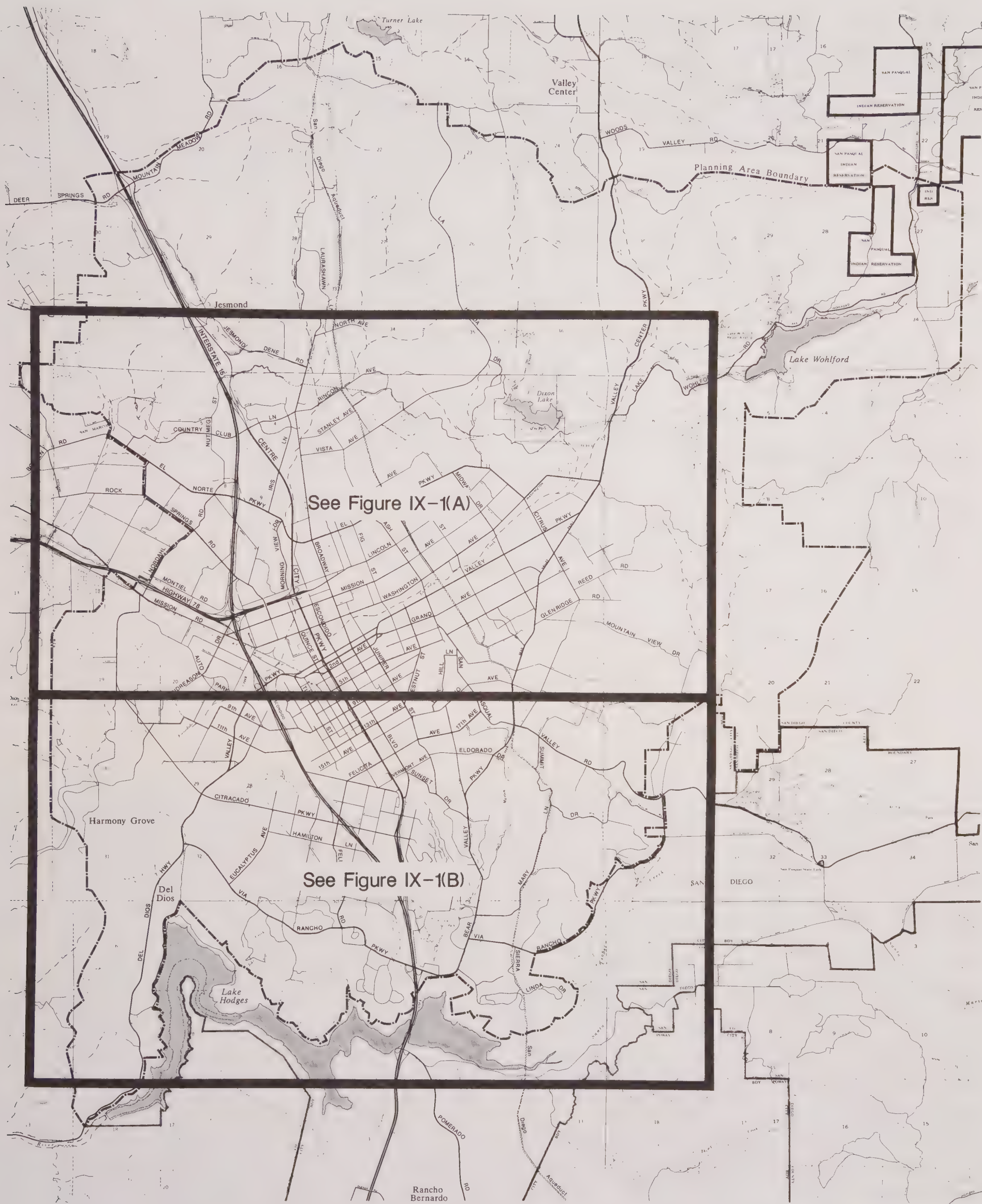


Figure IX-1 KEY TO NOISE EXPOSURE MAPS



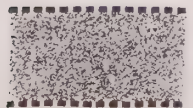
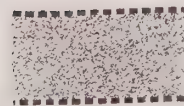

 AREAS EXPOSED TO A
CNEL OF 60dB OR GREATER

Figure IX-1(A)



AREAS EXPOSED TO A
CNEL OF 60dB OR GREATER

Figure IX-1(B)

Table IX-1: Summary of Noise Measurements

Location	Time Date	Distance to center of road (feet)	Sound Levels (dBA) ¹				Comments
			L _{eq} ²	L ₁₀ ³	L ₅₀	L ₉₀	
Center City Parkway at Brotherton	6:50 am 5/7/87	187	63	66	62	57	Next to vacant lot surrounded by resi- dential development.
San Pasqual Valley Rd. 700 feet north of Idaho	11:55 am 5/7/87	60	72	63	55	44	Siren: 95 dBA maximum during measurement. In vacant field.
Valley Parkway west of Citrus	12:50 pm 5/7/87	76	62	65	57	52	In vacant lot adjacent to multi-family devel- opment. Near stop- light.
Broadway south of El Norte	5:55 pm 5/7/87	65	64	67	62	58	In empty lot on west side of road. Residential develop- ment nearby.
Bear Valley Parkway south of Park Road	7:17 am 5/8/87	65	70	74	69	61	Near Kit Carson Park. Six trucks in 10 mins.
San Pasqual Valley Road east of High Grove Road	7:42 am 5/8/87	51	64	69	57	42	At edge of orange grove. Single family house across road.
Bear Valley Parkway north of Route 78	8:03 am 5/8/87	54	64	68	62	53	In vacant lot. Older single family houses nearby.
Hill Valley Road west of Citricado Parkway	8:34 am 5/8/87	12	53	--	--	--	Across from proposed Business Park. Very quiet. Background noise from Route 78.
El Norte Parkway east of Conway	5:10 pm 5/8/87	50	67	69	65	59	Same location as 24-hour measurement but setback further. Residential across El Norte with masonry wall.

Location	Time Date	Distance to near lane (feet)	(Sound Levels (dBA)) ¹				Comments
			L _{eq} ²	L ₁₀ ³	L ₅₀	L ₉₀	
I-15, at end of Deodar Road	5:38 pm 5/6/87	100	61	64	59	55	Some shielding from terrain. Near pro- posed convalescent hospital.
I-15, between Rock Springs and El Norte	2:14 pm 5/6/87	172	67	70	66	62	Good line-of-sight to all lanes. Same set- back at nearby resi- dential development.
I-15, south of North County Fair	7:20 am 5/7/87	700	67	--	--	--	West side of freeway on site being graded. Single-family homes to the northwest.
I-15, south of North County Fair	7:35 am 5/7/87	1200	60	61	60	58	Next to backyard of single-family home 201 Calle Florecita Pl.
I-15, 1/4 mile south of Felicita	8:01 am 5/7/87	450	68	70	68	66	On hillside overlooking freeway being developed for single-family homes
I-15, on Miller Ave.	8:21 am 5/7/87	500	56	59	55	52	In a lot lower than the freeway elevation. Shielding from terrain. Site of proposed church.

Table IX-2: Summary of 24-Hour Noise Measurements

El Norte Parkway
21 Feet to Center of Road, West of Conway St.
on Pole 12 Feet High

Time	Date	Leq (dBA)
6 - 7 pm	7 May 1987	72.5
7 - 8 pm	7 May 1987	70.5
8 - 9 pm	7 May 1987	69
9 - 10 pm	7 May 1987	69
10 - 11 pm	7 May 1987	66.5
11 - Midnight	7 May 1987	65.5
Midnight - 1 am	8 May 1987	63
1 - 2 am	8 May 1987	57.5
2 - 3 am	8 May 1987	57
3 - 4 am	8 May 1987	57.5
4 - 5 am	8 May 1987	61.5
5 - 6 am	8 May 1987	66.5
6 - 7 am	8 May 1987	72
7 - 8 am	8 May 1987	72
8 - 9 am	8 May 1987	71.5
9 - 10 am	8 May 1987	70.5
10 - 11 am	8 May 1987	70
11 am - Noon	8 May 1987	70.5
Noon - 1 pm	8 May 1987	71
1 - 2 pm	8 May 1987	71.5
2 - 3 pm	8 May 1987	72
3 - 4 pm	8 May 1987	73
4 - 5 pm	8 May 1987	72.5
5 - 6 pm	8 May 1987	<u>72</u>

CNEL = 74 dB

Interstate 15
at North County Fair
Approximately 70 Feet to Near Lane

Time	Date	Leq (dBA)
4 - 5 pm	6 May 1987	79.5
5 - 6 pm	6 May 1987	79.5
6 - 7 pm	6 May 1987	78
7 - 8 pm	6 May 1987	76.5
8 - 9 pm	6 May 1987	75.5
9 - 10 pm	6 May 1987	75.5
10 - 11 pm	6 May 1987	74
11 - Midnight	6 May 1987	73
Midnight - 1 am	7 May 1987	70.5
1 - 2 am	7 May 1987	68.5
2 - 3 am	7 May 1987	67
3 - 4 am	7 May 1987	68
4 - 5 am	7 May 1987	70.5
5 - 6 am	7 May 1987	75.5
6 - 7 am	7 May 1987	80
7 - 8 am	7 May 1987	80
8 - 9 am	7 May 1987	79
9 - 10 am	7 May 1987	78
10 - 11 am	7 May 1987	77.5
11 am - Noon	7 May 1987	77.5
Noon - 1 pm	7 May 1987	78
1 - 2 pm	7 May 1987	78
2 - 3 pm	7 May 1987	78.5
3 - 4 pm	7 May 1987	<u>79.5</u>

CNEL = 82.5 dB

¹A-Weighting--A standard frequency weighting which is commonly employed to measure the loudness of "noisiness" of sounds. A-weighting filters the microphone signal in a manner which correlates better with the sensation of the human ear. A-weighting is required by regulation promulgated by the U.S. EPA, the California Department of Aeronautics, CalTrans, and others. A 10 dB increase in sound level is perceived by people to be twice as loud. All noise data in this report are A-weighted.

²Leq--The equivalent steady-state A-weighted sound level that, in a stated period of time, would contain the same acoustic energy as the time-varying sound level during the same time period.

³L₁₀--The sound level in dBA that was equaled or exceeded 10 percent of the time; L₅₀ and L₉₀ are the levels equaled or exceeded 50 and 90 percent of the time, respectively.

strip is isolated from urbanized residential areas and there are no known plans for expanding the facility. Noise from this facility is not a problem.

4. Stationary Ground Noise Sources

The City has identified child day-care centers as a potential noise problem in the community. On May 7, 1987, noise measurements were made at the Children's World Preschool/Child Care Center on Mary Lane west of Bear Valley Parkway. The average sound level at the property line increased from an L_{eq} of 53 dBA before recess to an L_{eq} of approximately 60 dBA when the children came outdoors. Maximum instantaneous noise levels up to 69 dBA were produced by children's voices and playing on equipment. While this activity may be annoying to the neighbors, it would not be expected to increase significantly the CNEL.

Existing local industries are not major sources of noise and are generally isolated from residential areas.

B. NOISE-SENSITIVE LOCATIONS

Noise-sensitive land uses such as schools, parks, and medical facilities are listed in the "Community Facilities " section of this document.

C. EXISTING NOISE PROBLEMS

A noise problem occurs where a land use is not compatible with its noise environment. Figure IX-1 shows the areas of the City that are exposed to a CNEL of 60 dB or greater. This level is normally unacceptable for residential neighborhoods, parks, schools, and medical facilities. When these land uses are located within this noise-impacted zone, portions of the outdoor use areas may be degraded by the noise, and buildings on the site may require extra noise insulation to reduce interior noise to acceptable levels. Title 24, Part II of the California Administrative Code requires that an acoustical study be performed for new multi-family dwellings proposed in areas exposed to a CNEL of 60 dB or greater. The purpose of the study is to demonstrate how the project will provide for acceptable interior noise levels.

From Figure IX-1, it is apparent that some schools and parks are located in this noise-impacted zone. Kit Carson Park is exposed to high noise levels from I-15 and Bear Valley Parkway. San Pasqual High School is exposed to noise from Bear Valley Parkway. Grape Day Park is exposed to noise from Broadway and Escondido Boulevard. Lincoln and Central elementary schools are exposed to noise from Broadway. Escondido High School is located between Centre City Parkway and Broadway.

Specific noise problems such as barking dogs or loud parties are beyond the scope of a General Plan and are more appropriately controlled through the City's Noise Ordinance.

X. INFRASTRUCTURE

A. WATER SUPPLY

1. Water Sources and Current Use

Escondido obtains water from two sources: approximately 60 percent is supplied by the San Diego County Water Authority (SDCWA), and the remainder comes from Escondido's own water supply. The proportion delivered by each of the two agencies varies slightly from year to year. For the year ending July 1986, Escondido supplied 9,924 acre-feet for its customers while the SDCWA supplied 13,788 acre-feet. Agricultural customers used approximately 28 percent of the total water delivery.

Dixon Lake, Lake Wohlford, and Lake Henshaw serve as reservoirs for Escondido. The San Diego Aqueduct is the City's source of imported water. Local water comes from the Lake Henshaw-Lake Wohlford systems. A water filtration plant, with a capacity of 90 mgd (million gallons per day) is located at Dixon Lake. Of that capacity, 18 mgd is owned by the Vista Irrigation District, and the remainder is owned by Escondido.

Raw water is delivered to the treatment plant via pipelines from aqueducts of the SDCWA directly to the plant or through Dixon Lake, or from Lake Wohlford. Water is stored in Lake Wohlford from the Lake Henshaw-San Luis Rey River system for the City of Escondido and Vista Irrigation District.

Emergency Supplies. Escondido's storage capacity is adequate to meet emergency water needs. In addition, the City could draw a limited quantity of filtered water from the SDCWA aqueducts. Emergency connections could be made to the Rincon del Diablo Irrigation District system.

Current demand on the filtration plant averages 22 mgd in January, with a peak demand of 29 mgd and an instantaneous peak demand of 45 mgd. Peak summer demand reaches 70 mgd. Most of the increased summer demand is related to agricultural needs.

2. Constraints

Based on an average household size of 3 persons per dwelling unit and an average residential demand of 750 gallons per dwelling unit per day, it is estimated that the water system could serve approximately 288,000 people. The water supply system in general has no major constraints other than some areas of low pressure, which include higher elevation areas such as Hogback Mountain. These areas require pumping systems in order to increase the pressure to acceptable levels. Such a system would need to be installed prior to development.

Although agricultural uses generally consume more water than residential uses, it has been estimated that residential development which is built at more than 4 to 5 dwelling units per acre may break even with agricultural development in terms of water use.

San Diego County Water Authority. That Escondido draws some water from SDCWA does not pose a significant constraint to development. Escondido does not draw its peak supplies from SDCWA; Escondido has enough storage capacity that it could draw water during off-peak times and store it for use during peak demand.

The SDCWA has proposed a dam, the Pamo Dam, in the San Pasqual Valley to expand its water storage capacity. The Army Corps of Engineers has announced a decision to issue a permit for the Pamo Dam. Environmental organizations, the EPA and the U.S. Fish and Wildlife Service have expressed opposition to the project because of its potential biological impacts.

Rincon del Diablo Municipal Water District. The outskirts of Escondido are served by the Rincon del Diablo Municipal Water District. In some areas the Escondido and Rincon water services, lines, and metering systems overlap. This organization, which has arisen because of assumptions that the districts would eventually merge, creates some difficulties in operations, maintenance, and administration.

A 1972 agreement between the City of Escondido and the Rincon del Diablo Water District would have allowed Escondido to purchase that district pending settlement of a 1968 lawsuit brought against the City by the Mission Indians over water rights. A bill is pending in Congress to settle the Indian lawsuit. The Rincon district is now opposed to purchase by the City, however, and it is uncertain what the outcome will be.

The Rincon del Diablo Municipal Water District serves a population of approximately 22,670 through two improvement districts. The great majority of the population is served through improvement district "1." Improvement district "A" is supplied by the City of Escondido. Population growth and water demand for the Rincon district has been estimated through the year 2010. In 1990 the demand is estimated at 6.8 mgd. This is expected to increase to 10.4 mgd by 2010, when the population of the district is projected to reach 46,000.

Rincon del Diablo Municipal Water District purchases its water supplies from the San Diego County Water Authority, City of Escondido, Valley Center Municipal Water District and San Marcos Water District. Most of the water is supplied by SDCWA. Nearly three-quarters of the water is supplied to residential customers, with smaller percentages supplied to agricultural and commercial customers.

A study completed for the district 5 years ago recommended that future supply improvements be focused on storage. At that time the district's water supply from the San Diego Aqueduct was finite, and storage was needed to meet peak-week demand, emergency supply, and fire flow storage. Since that time the water supply from the aqueduct has increased and the focus has shifted away from storage in response to the increase. Nevertheless proposed improvements to the system, described below, include storage projects.

Del Dios Highway Reservoir (R-6). This reservoir is currently under construction and scheduled for completion by March 1988 at a cost of \$1.6 million. It will hold 5 million gallons.

Bernardo Mountain Reservoir (R-5). Construction of this 3-million gallon reservoir will be contracted by November 1987 at an estimated cost of \$1.8 million. Completion is projected for June 1988.

Parallel Backbone Aqueduct Connection #2. This project will improve the supply from the San Diego Aqueduct. Now authorized for design, the project will be under construction by 1988, to be operational in 1990-91. Total cost is estimated at \$3.7 million.

L.A. Moree Reservoir (R-7). A 4-million gallon reservoir site is currently being acquired. The reservoir could be operational by 1990-91.

Improvements to the water supply system would also necessitate alteration to some existing lines and installation of some additional lines, at an estimated cost of \$5.8 million for new facilities. Projects which do not need to be constructed because of these improvements were estimated at a cost of \$8.9 million.

Currently the water supplied by the Rincon District to its customers is unfiltered Colorado River water. The capacity of the Skinner Filtration Plant will be expanded by 1991-92. At that time, the Rincon District will receive filtered water on a full time basis. In the interim, it will receive filtered water about 80 percent of the time.

The Rincon del Diablo Municipal Water District is also exploring the possibility of using groundwater for an emergency supply.

B. SEWER

1. Existing Use and Constraints

Escondido's wastewater treatment plant is located on the west side of town at Hale Avenue. Wastewater is treated, then conveyed through a 13-mile land outfall and an 8,000-foot ocean outfall. It is discharged in the ocean between the communities of Cardiff and Solana Beach. The ocean outfall capacity is shared with the Cardiff and Solana Beach Sanitary Districts. Presently, Escondido discharges about 12.5 mgd, and the other 2 districts discharge about 3.5 mgd, for a total nonpeak discharge of 16 mgd. Total peak discharges reach up to 20 mgd. This is just below the total capacity of the ocean outfall, which is estimated at 22 mgd. The Cardiff and Solana Beach Sanitary Districts own 20 percent of the capacity, and Escondido owns 80 percent. Using a figure of 250 gallons per day per dwelling unit, it is estimated that the outfall will be operating at capacity with the addition of 7,000 to 8,000 dwelling units.

The ocean outfall is the major limiting factor for the wastewater treatment system. The land outfall, which is owned by the City of Escondido, has a capacity of 27 mgd.

Treatment Plant Capacity. Escondido's secondary treatment facility can treat 16.5 mgd. The City of San Diego owns 5.5 mgd, of which 0.5 mgd is associated with a loan to Escondido for plant improvements. The capacity owned by the City of San Diego is used for wastewater from Rancho Bernardo, which is pumped to the Escondido treatment plant.

The plant was recently expanded to its current capacity. Minor improvements, expected to be in place by this summer, are expected to increase the total plant

capacity to approximately 17 mgd. Additional minor improvements could expand the capacity to 18 or 19 mgd. SDCWA loaned funds to Escondido for these initial improvements. SDCWA will be paid back either in cash or in additional capacity; that is, SDCWA will retain ownership of 5.5 mgd capacity in the plant if the loan is not paid back. If the loan is paid back, SDCWA will own 5 mgd of the plant's total capacity.

Additional capacity will eventually be needed for this treatment plant. A facilities master plan which is currently underway will reveal the ultimate capacity of the Hale Avenue site. It is estimated to be 23 to 24 mgd if several facility and operational improvements are made.

One current proposal calls for pumping 11 mgd from the Hale Avenue plant into the San Pasqual Valley for groundwater recharge. Three mgd of brackish water would be pumped out of the valley, to be discharged through the ocean outfall. This proposal would not be implemented if the Pamo Dam project is built.

Reclamation. The Rancho Cielo Sanitation District, located just west of Escondido, has reached an agreement with Escondido to use approximately 3 mgd of treated wastewater for irrigation. This will expand Escondido's outfall capacity and provide a source of revenue as well, since Rancho Cielo will pay for the water.

Additional reclamation projects are being considered. The parks department is looking at a site near the treatment plant where reclaimed water can be used for irrigation. It is impractical to use reclaimed water for downtown sites, because new lines would have to be installed. Other opportunities for the use of reclaimed water may exist in communities west of Escondido. Studies are also currently underway to determine the feasibility of alternatives to land disposal of sludge, such as composting for agricultural or landscaping use.

Septic Tanks. Some county areas are on septic systems. Many of these areas are experiencing problems during wet weather, particularly on the eastern boundary of the City. This can result in standing water with high coliform counts. Many of the residents in these areas resist proposals for sewer system extensions.

Planned Improvements. Improvement of the ocean outfall is in the current capital improvements program. Its capacity probably will be increased to 32 mgd by next year. Once these improvements are made, it is estimated that Escondido could serve about 307,000 residents.

C. STORM DRAINAGE

1. Existing Drainage System

Escondido has three main drainage courses:

- Escondido flood control channel, which has a capacity of 18,000 cfs (cubic feet per second) at the west end;
- Reidy Creek, which has a capacity of 7,700 cfs between Rincon Avenue and Centre City Parkway; and

- Marten Creek, with a capacity of 2,800 cfs at Bear Valley Parkway.

Each of these drainage courses is designed for a 100 year flood; that is, a flood which has a 1 percent chance of occurring each year. In urbanized areas, runoff is discharged into storm drains, which are designed for a 50-year flood. Streets are considered part of the storm drain system, and streets would be flooded up to the level of the curb during the 50-year flood. Streams carry the runoff in rural areas. Drainage basins have been defined for undeveloped areas. Prior to development, storm drains must be installed in the drainage basin to carry runoff to the appropriate channel, as shown in Table IX-1. Fees would be collected to finance the storm drain system. As shown in the table, the improvements have been partially completed in some of the basins.

It is important to note that the development fees for the county basins are based on ditches and culverts. The fees will be higher to meet the City's standards, which require installation of storm drains. The City will re-evaluate the development fees for any proposal which occurs in the county basins and which will be annexed to the City. The fee will be paid as development occurs, and they are based on the cost of installing major collectors. The developer is responsible for on-site storm drainage.

This system could present financial problems for the City if only a small amount of development were to occur in a drainage basin; the City would then be forced to make the improvements but would not be able to collect sufficient fees to pay for them. Also, the City collects fees only for development within the City limits. Thus, for basins which are under both county and City jurisdiction, it is conceivable that the City would make improvements but could not fully recover its costs if development occurs primarily in unincorporated area. However, the City can impose the fee at the time that a property owner in an unincorporated area decides to annex and apply for a building permit, subdivision or parcel map.

The City basins listed in Table IX-1, plus 4 storm drain basins to be processed and adopted at some point in the future, cover the entire area of the City. The future storm drain basins are South Midway, Beech Street, North Escondido Boulevard, and South Escondido Boulevard.

D. POWER SUPPLY

San Diego Gas and Electric (SDG&E) provides electricity and natural gas to all of San Diego County (Escondido Economic Development Commission 1986; Spaulding 1987). SDG&E has identified policies in its 5-year plan to lessen dependency on foreign oil. These policies will result in increasing efforts to develop alternative energy sources and conservation. SDG&E purchases coal-fire generated electricity from neighboring utility companies in Arizona and New Mexico, and the electricity is transmitted through a 180-mile power line. SDG&E actively encourages energy cogeneration agreements, purchasing surplus energy generated by local businesses.

The capacity of the San Onofre nuclear power plant, located on the border of San Diego and Orange counties, is 20 percent owned by SDG&E. SDG&E expects nuclear energy to comprise a significant portion of its power supply, ultimately contributing 440 megawatts of electricity to San Diego County.

Table X-1: Storm Drain Basins

<u>City Basins</u>	<u>Drainage Course</u> ¹	<u>Development Fees/Acre</u> ²	<u>Jurisdiction of Runoff Area</u>	<u>Percent Improve Complete</u>
Ash Street	EFCC	\$1,740.09	City/Co.	95%
Broadway	EFCC	5,248.80	City	0%
Citrus Avenue	EFCC	3,073.03	City/Co.	30%
Del Dios: Zone I	EFCC	1,480.74	City/Co.	70%
Zone II	EFCC	5,978.50	City/Co.	70%
Fig-Gamble: Fig	EFCC	3,253.09	City/Co.	90%
Gamble	EFCC	3,215.45	City	90%
Harmony Grove	EFCC	1,458.00	City/Co.	90%
Lehner Avenue	RC	3,400.00	City/Co.	0%
Mission Road	EFCC	6,100.00	Co./San Marcos	10%
Montiel Road	EFCC	3,000.00	Co./San Marcos	0%
Ninth Avenue/ Valley Parkway	EFCC	1,860.00	City/Co.	70%

County Basins Adopted by City:

Elfin Forest	\$ 805.00
Felicita	1,341.00
Jesmond Dene	1,050.00
Rees Road	1,341.00
Reidy Canyon	490.00
San Marcos	385.00
San Pasqual	805.00

¹ EFCC: Escondido Flood Control Channel

KCC: Kit Carson Creek

RC: Reidy Creek

²Increases 8 percent per year.

Efforts of local businesses and elected officials have increased the development of alternative energy technologies, notably solar and geothermal energy.

Two waste-to-energy plants have been proposed in San Diego County. SDG&E has agreed to purchase the power from the plant proposed for San Marcos, which could ultimately supply 25 percent of SDG&E's increased energy needs (34 megawatts a day); however, the plant has met with some political resistance, and it is unsure whether the facility will be built.

SDG&E currently foresees no capacity constraints, and power supply for the City of Escondido would not be adversely affected if the San Marcos waste-to-energy plant is not constructed.

E. SOLID WASTE

Much information in this section was derived from an interview with Jack McDermott, General Manager of Escondido Disposal, Inc., and from the recent series of articles in the Escondido Times-Advocate, (McDermott 1987.)

Escondido's solid waste is taken by a private contractor to the San Marcos dump. This dump is expected to close by 1990, and waste disposal alternatives are currently being investigated. The alternatives generally fall into 4 categories: acquisition of a new landfill site; construction of a waste-to-energy plant adjacent to the San Marcos landfill; recycling; and expansion of the existing landfill site.

1. New Landfill

In October 1985, San Diego County hired a consultant to determine possible sites for a new landfill in the north county and to set up a citizens task force to review the potential sites. The first step in this process was to find areas with appropriate geological characteristics, including the following:

- A large enough area to handle 25 to 50 years worth of trash;
- Available soil to cover the trash daily as required by state law;
- No chance of surface or ground water contamination.

The task force held its first meeting in January 1986, and soon thereafter established criteria to evaluate an appropriate site. Following that, the task force narrowed down the selection process from 18 possible sites to 7. These were further narrowed down, and on August 5 the task force met again to vote on 3 final choices. The task force, however, was divided, and significant public opposition began to arise. For each site there were 1 or more persons or organizations citing specific reasons against the proposed locations. Furthermore, the choice of these sites did not necessarily guarantee their acquisition, since no landowner had offered to sell.

Early in 1987, a new site was under consideration. There has not yet been any public opposition to the site, and the landowner has indicated a willingness to sell. Thus, a total of 4 sites are now under serious consideration:

- Near I-15 and Lawrence Welk Village;

- Twin Oaks Valley;
- Vista, near Carlsbad Raceway;
- Keys Canyon (the last site to be added).

There are advantages and disadvantages with each site. Some of the common disadvantages include lack of soil cover, potential ground or surface water problems, public opposition or potential for residential disruption, and high development or transportation costs. Some of the sites have advantages which include proximity to major transportation routes, large site, lack of public opposition, adequate soil cover, and an owner willing to sell.

It is important to note that locating new sites generally is politically unpopular. The permitting process can take 5 years or more because of environmental review procedures and the expected delays which are associated with public opposition. Even if a new site were selected today, it would be at least another 5 years before the site were operating. Thus, if the San Marcos site closes in 1990, solid waste disposal still will be several years behind the county's capacity, particularly if additional waste reduction measures or disposal alternatives are not implemented.

2. Waste-to-Energy Plant

North County Resource Recovery Associates (NCRRA) owns 110 acres adjacent to the San Marcos Landfill. NCRRA has proposed a plant which would burn 1,500 tons of solid waste per day to generate electricity. There has been considerable public opposition to this plan, however. Some of the concerns are related to dioxin and other air pollutants. Proponents of the plant maintain that its air quality controls will be very strict, and will be the only plant in the county which will trap air pollutants before they are released through 2 overlapping techniques: scrubbers and a bag house. Burnable and unburnable trash items would be separated. Some materials, such as corrugated cardboard, plastic, and aluminum and other metals, would be separated and not burned; instead, they would be recycled. It is not known at this time whether this plant will be built, as it is still in the permitting process.

3. Recycling

Recycling programs can reduce waste significantly. Many southern California communities are investigating recycling as an alternative. It has been estimated that the recycling that could be done at a waste-to-energy plant could capture a maximum of 15 percent of the recyclables which are delivered. An organized recycling program, on the other hand, can reduce overall waste by 25 to 50 percent. Oceanside recently began a recycling program, using a state grant to purchase trucks and other equipment.

While there is no question that recycling can extend the life of a landfill significantly, it will not remove the need to locate another site. Furthermore, the market for recycled materials fluctuates significantly, which contributes to the lack of private investment in recycling. Nevertheless, recycling is a viable alternative, particularly as landfill prices rise; in the worst case, recycling would not generate funds, or would cost some amount of money equal to or less than land disposal.

4. Expansion of Existing Landfill Site

Some proposals have been made to expand the San Marcos landfill. This could be accomplished either by raising the height of the fill materials, or expanding its width. The owner of a site adjacent to the landfill, NCRRA, has offered to sell 110 acres to the county to expand the dump, if the waste-to-energy proposal is not approved. However, landfill expansion would be required to go through the same permitting process as siting a new landfill. Although it is less likely that significant public opposition will arise for expansion of an existing site, opposition could delay the process significantly.

Sources of Data

Spaulding Ross. 1986. SDG&E, communication. Escondido Economic Development Commission. 1986. Escondido Community Profile 1986.

McDermott Jack. 1986. General Manager. Escondido Disposal, Inc., telephone communication, May 1987. Escondido Times-Advocate. "Down in the Dumps" five-part article on solid waste, May 3-7.

XI. TRANSPORTATION

A. ROAD NETWORK

The City of Escondido's Circulation Plan identifies the future roadway configuration envisioned for the City. This plan contains a series of roadway classifications ranging from Prime Arterials (6- to 8-lane divided roadway) down to Collector Roads which will ultimately contain 2 or 4 lanes. this Circulation Plan was developed to provide access to all areas of the City and sized to accommodate the projected traffic volumes.

In 1979, Gruen Associates prepared the Escondido Circulation Plan 1979, in which the planned roadway system was reevaluated and travel forecasts prepared for the main circulation streets.

In general, all of the streets shown on the Circulation Plan are constructed today. For the most part, however, they are not constructed to their full width as envisioned in the Circulation Plan, with many streets being only 2 lanes wide. A few noteworthy streets are not constructed today. These include Citracado Parkway from Interstate 15 to Highway 78, Cloverdale Road from Valley Center Road south to San Pasqual Valley Road, and El Norte Parkway from Citrus to Washington. The Circulation Plan classification and current conditions along with existing and forecast daily traffic volumes for the main streets in Escondido are listed on Table XI-1.

As can be seen from Table XI-1, the majority of the classified streets within the City are not built to their full classification. The responsibility for widening these streets has generally been placed on development as it occurs. In order for this to be allocated equitably to the various developments within the City, the City has established a Traffic Impact Fee Program. This program assigns a specific cost per new trip. This fee per trip is then assessed to each development based on the number of new trips which are created and a fee is collected at the time building permits are issued. Credit against this fee are given to the developer at such time that they actually complete the construction of specific improvements. As a result of this program, the City has collected a considerable amount of money and anticipates widening and constructing several roadways in the near future.

In general, the City street system works reasonably well from a technical standpoint. There are no areas of severe congestion, particularly when taken in light of criteria usually applied to suburban or urban conditions. There have, however, been numerous concerns expressed during the initial task force meetings, and at other public meetings relating to traffic conditions. This seems to be related to the evolution of land uses from rural to suburban conditions, with residents generally desiring low traffic volumes on streets to maintain the rural characteristics of Escondido. These types of comments are particularly predominant when new land development projects are being proposed. These have included major developments, primarily on the outskirts of the City, including the Daley Ranch, Cloverdale Ranch on the north and east sides of the community, and the Quail Hills Specific Plan on the southwest side of the community.

City staff has identified areas of potential capacity constraints when existing volumes and street configurations are compared with street capacities as identified in the 1979 Gruen study. These streets are listed on Table XI-2.

Based on field observations of these roadway segments, there does not appear to be significant congestion turn the day on any of these streets. There are areas of limited peak hour congestion, although no areas of congestion seem unusual for a suburban area. In addition, with the completion of the roadway network as envisioned by the City's Circulation Plan, most of these street will operate with acceptable levels of congestion.

Table XI-1: Traffic Volumes

<u>Street</u>	<u>Segment</u>	<u>General Plan¹ Classification</u>	<u>Current Conditions</u>	<u>Forecast² ADT</u>	<u>Existing³ ADT</u>
Ash Street	Vista Ave. to El Norte Pkwy	Collector	2 to 4 Lanes	12,400	2,900
	El Norte Pkwy to Lincoln	Collector	Local	21,000	5,100
	Lincoln to Grand	Major	Collector	26 to 32,000	12 to 21,000
	Grand to Oak Hill	Major	Major	22,000	16,800
Bear Valley Parkway	San Pasqual Rd to San Pasqual Valley Rd	Major	Major	26 to 30,000	13,600
	San Pasqual Valley Rd. to Valley Pkwy	Major	2 to 4 Lanes	20 to 24,000	5 to 12,000
Broadway	Mtn. Meadow to Nutmeg	Collector	0 to 2 Lanes	18,000	0 to 5,000
	Nutmeg to El Norte Pkwy	Major	2 to 4 Lanes	13 to 18,000	5 to 12,000
	El Norte Pkwy to Lincoln	Major	Collector	25,000	16,000
	Lincoln to Second	Major	Major	25,000	6 to 22,000
Centre City Parkway	Mtn. Meadow to Country Club	Collector	Collector	13,000	6,000

<u>Street</u>	<u>Segment</u>	<u>General Plan¹ Classification</u>	<u>Current Conditions</u>	<u>Forecast² ADT</u>	<u>Existing³ ADT</u>
Centre City Parkway (cont)	Country Club to El Norte Parkway	Prime	Major	18,000	12,500
	El Norte Pkwy to Highway 78	Prime	Major	17,000	19,000
	Highway 78 to Second	Prime	Major	32,000	17 to 21,000
	Second to Felicita	Prime	Major	34,000	17,000
	Felicita to I-15	Prime	Major	30,000	18,000
Citracado Parkway	I-15 to Valley	Major	0 to 4 Lanes	12,000	0 to 3,000
	Valley to I-15	Major	0 to 4 Lanes	14,000	0 to 3,000
	I-15 to Centre City Parkway	Collector	2 Lanes	7,000	2,000
El Norte Parkway	West City Limits to I-15	Major	2 Lanes	14 to 18,000	5,000
	I-15 to Broadway	Major	Collector	14 to 21,000	7,000
	Broadway to Midway	Major	2 Lanes	12 to 18,000	6 to 13,000
	Midway to Bear Valley	Major	0 to 2 Lanes	10 to 12,000	0 to 4,000
Lincoln Parkway	Broadway to Ash	Prime	Collector	21 to 24,000	18,000
	Ash to Rose	Collector	Local	12,000	6,000

<u>Street</u>	<u>Segment</u>	<u>General Plan¹ Classification</u>	<u>Current Conditions</u>	<u>Forecast² ADT</u>	<u>Existing³ ADT</u>
Mission	Nordahl to Andreassen	Major	Major	28,000	17,000
	Andreassen to Centre City	Major	Major	31,000	12 to 27,000
	Centre City to Ash	Major	Major	20 to 29,000	12 to 22,000
	Ash to Rose	Collector	Collector	16,000	9,000
San Pasqual Road	Bear Valley to San Pasqual Valley Road	Major	2 Lanes	12,000	4,000
San Pasqual Valley Road	Bear Valley to San Pasqual Road	Major	2 Lanes	20,000	10,000
Valley Pkwy	Bear Valley Pkwy to Midway	Prime	Prime	22 to 26,000	9 to 12,000
	Midway to Ash	Major	Collector	33,000	22 to 29,000
	Ash to Hickory	Major	Collector	34,000	21 to 28,000
	Hickory to Tulip	Collector	Collector	N/A	11 to 14,000
	Tulip to 9th	Prime	Prime	33 to 40,000	17 to 24,000
	9th to South City Limits	Major	2 Lanes	22 to 30,000	11 to 15,000
Via Rancho Parkway	Valley Pkwy to I-15	Major	2 Lanes	10 to 12,000	5,000

1. Per Circulation Element of the Escondido General Plan.

2. From the Escondido Circulation Plan 1979, Gruen Assoc.

3. From "San Diego Region Average Weekday Traffic Volumes, 1981-1985," SANDAG.

Table XI-2: Current Street Constraints

<u>Street</u>	<u>Segment</u>	
	<u>To</u>	<u>From</u>
Bear Valley Parkway	San Pasqual Road	San Pasqual Valley Road
Broadway	Mission	Lincoln
El Norte Parkway	Nordahl Centre City Parkway	Iris Ash
Grand Avenue	Rose Valley	Ash Date
Mission Avenue	Mission Road	Escondido
Mission Road	Citracado	Mission Avenue
San Pasqual Valley	Oak Hill	Idaho
Valley Parkway	Midway 9th	Hickory Citracado
Washington	Hale	Quince

B. NONMOTORIZED CIRCULATION

The City's Circulation Element text, dated July 6, 1983, identifies a specific goal of the Circulation Element Plan is to

...provide maximum flexibility to achieve mobility, efficiency, and safety for all modes of transportation trips, including but not limited to motor vehicles, goods movement and freight deliveries, transit, bicycles, pedestrians, and rail. The mix of transportation modes to be accommodated shall be consistent with other community goals and values. A balanced approach to provide a mobility for a variety of trips shall account for the following priorities by trip mode: vehicular, transit, pedestrian, bicycle, and rail/freight movement.

To achieve the nonmotorized transportation aspects of this goal, the City has taken several steps. These steps are related primarily to the overall road system, and thus are linked with the expansion of the vehicular transportation system. All new streets within the City of Escondido are provided with sidewalks for pedestrian use. In addition, the City's downtown revitalization plan calls for several major pedestrian circulation corridors, including provisions for street furniture and street width reduction to encourage pedestrian circulation in the downtown area.

All Circulation Element street which are constructed or widened have provisions for bicycle traffic. In addition, several streets have signed and/or striped bicycle lanes. The overall citywide bicycle system, however, is not complete to date. As a result, there are numerous areas where bicycles must share the travel lane with automobile and truck traffic.

Interest has been expressed in developing a citywide trails system to enhance nonvehicular movement of people. This would include hiking, as well as equestrian riding trails. As with the bicycle system, there are localized areas where trails are available apart from the roadway system. These, however, do not form complete links through the City.

C. TRANSIT SYSTEM

North County Transit District (NCTD) provides bus service for the City of Escondido. This is generally provided along the major circulation corridors with a heavier concentration of bus routes in the downtown area.

There are 3 types of transit service which are provided in the City of Escondido. The primary service provided by NCTD is the local bus service. This service runs buses on 30 or 60-minute headways and provides local access within the City and to the surrounding communities. In addition, the County Transit Service provides county rural routes to connect Escondido with the Valley Center area and the County transit system also provides express bus service from downtown Escondido south on Interstate 15 to connect with the City of San Diego.

There are 2 transfer points located within the City where timed transfers can take place. The primary one is located in downtown Escondido on Broadway at Valley Parkway. This location incorporates 10 different routes. In addition, a smaller transit center is located at the North County Faire Shopping Center on Via Rancho Parkway at Interstate 15. This provides time transfers between 3 different bus routes.

Planning for future bus route expansions or the possibility of a commuter rail or light rail service between Escondido and the surrounding communities is also handled by North County Transit District. They presently have a study underway to evaluate the feasibility of rail service between Escondido and Oceanside. In addition, as various areas of Escondido develop, NCTD will continue to modify and add to its bus routes to accommodate the increased demands for service.

APPENDIX A

APPENDIX A

FUNDAMENTAL CONCEPTS OF ENVIRONMENTAL NOISE

This section provides background information to aid in understanding the technical aspects of this report.

Three dimensions of environmental noise are important in determining subjective response. These are:

- a) The intensity or level of the sound;
- b) The frequency spectrum of the sound;
- c) The time-varying character of the sound.

Airborne sound is a rapid fluctuation of air pressure above and below atmospheric pressure. Sound levels are usually measured and expressed in decibels (dB), with 0 dB corresponding roughly to the threshold of hearing.

The "frequency" of a sound refers to the number of complete pressure fluctuations per second in the sound. The unit of measurement is the cycle per second (cps) or hertz (Hz). Most of the sounds which we hear in the environment do not consist of a single frequency, but of a broad band of frequencies, differing in level. The name of the frequency and level content of a sound is its sound spectrum. A sound spectrum for engineering purposes is typically described in terms of octave bands which separate the audible frequency range (for human beings, from about 20 to 20,000 Hz) into ten segments.

Many rating methods have been devised to permit comparisons of sounds having quite different spectra. Surprisingly, the simplest method correlates with human response practically as well as the more complex methods. This method consists of evaluating all of the frequencies of a sound in accordance with a weighting that progressively de-emphasizes the importance of frequency components below 1000 Hz and above 5000 Hz. This frequency weighting reflects the fact that human hearing is less sensitive at low frequencies and at extreme high frequencies relative to the mid-range.

The weighting system described above is called "A"-weighting, and the level so measured is called the "A-weighted sound level" or "A-weighted noise level." The unit of A-weighted sound level is sometimes abbreviated "dBA." In practice, the sound level is conveniently measured using a sound level meter that includes an electrical filter corresponding to the A-weighting characteristic. All U.S. and international standard sound level meters include such a filter. Typical sound levels found in the environment and in industry are shown in Figure A-1.

Although a single sound level value may adequately describe environmental noise at any instant in time, community noise levels vary continuously. Most environmental noise is a conglomeration of distant noise sources which results in a relatively steady background noise having no identifiable source. These distant sources may include traffic, wind in trees, industrial activities, etc. and are relatively constant from moment to moment. As natural forces change or as human activity follows its daily cycle, the sound level may vary slowly from hour to hour. Superimposed on this slowly varying background is a succession of identifiable noisy events of brief duration. These may include nearby activities such as single vehicle passbys, aircraft flyovers, etc. which cause the environmental noise level to vary from instant to instant.

To describe the time-varying character of environmental noise, statistical noise descriptors were developed. " L_{10} " is the A-weighted sound level equaled or exceeded during 10 percent of a stated time period. The L_{10} is considered a good measure of the maximum sound levels caused by discrete noise events. " L_{50} " is the A-weighted sound level that is equaled or exceeded 50 percent of a stated time period; it represents the median sound level. The " L_{90} " is the A-weighted sound level equaled or exceeded during 90 percent of a stated time period and is used to describe the background noise.

As it is often cumbersome to quantify the noise environment with a set of statistical descriptors, a single number called the average sound level or " L_{eq} " is now widely used. The term " L_{eq} " originated from the concept of a so-called equivalent sound level which contains the same acoustical energy as a varying sound level during the same time period. In simple but accurate technical language, the L_{eq} is the average A-weighted sound level in a stated time period. The L_{eq} is particularly useful in describing the subjective change in an environment where the source of noise remains the same but there is change in the level of activity. Widening roads and/or increasing traffic are examples of this kind of situation.

In determining the daily measure of environmental noise, it is important to account for the different response of people to daytime and nighttime noise. During the nighttime, exterior background noise levels are generally lower than in the daytime; however, most household noise also decreases at night, thus exterior noise intrusions again become noticeable. Further, most people trying to sleep at night are more sensitive to noise.

To account for human sensitivity to nighttime noise levels, a special descriptor was developed. The descriptor is called the CNEL (Community Noise Equivalent Level) which represents the 24-hour average sound level with a penalty for noise occurring at night. The CNEL computation divides the 24-hour day into three periods: daytime (7:00 am to 7:00 pm); evening (7:00 pm to 10:00 pm); and nighttime (10:00 pm to 7:00 am). The evening sound levels are assigned a 5 dB penalty and the nighttime sound levels are assigned a 10 dB penalty prior to averaging with daytime hourly sound levels.

For highway noise environments, the average noise level during the peak hour traffic volume is approximately equal to the CNEL.

The effects of noise on people can be listed in three general categories:

- a) Subjective effects of annoyance, nuisance, dissatisfaction;
- b) Interference with activities such as speech, sleep, and learning;
- c) Physiological effects such as startle, hearing loss.

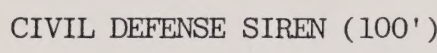
The sound levels associated with environmental noise usually produce effects only in the first two categories. Unfortunately, there has never been a completely predictable measure for the subjective effects of noise nor of the corresponding reactions of annoyance and dissatisfaction. This is primarily because of the wide variation in individual thresholds of annoyance and habituation to noise over time.

Thus, an important factor in assessing a person's subjective reaction is to compare the new noise environment to the existing noise environment. In general, the more a new noise exceeds the existing, the less acceptable the new noise will be judged.

With regard to increases in noise level, knowledge of the following relationships will be helpful in understanding the quantitative sections of this report:

- a) Except in carefully controlled laboratory experiments, a change of only 1 dB in sound level cannot be perceived.
- b) Outside of the laboratory, a 3 dB change is considered a just-noticeable difference.
- c) A change in level of at least 5 dB is required before any noticeable change in community response would be expected.
- d) A 10 dB change is subjectively heard as approximately a doubling in loudness, and would almost certainly cause an adverse community response.

A-WEIGHTED SOUND
PRESSURE LEVEL,
IN DECIBELS



JET TAKEOFF (200')

RIVETING MACHINE

DIESEL BUS (15')

BAY AREA RAPID TRANSIT TRAIN PASSBY (10')

PNEUMATIC DRILL (50')

SF MUNI LIGHT-RAIL VEHICLE (35')

FREIGHT CARS (100')

VACUUM CLEANER (10')

SPEECH (1')
AUTO TRAFFIC NEAR FREEWAY

LARGE TRANSFORMER (200')

AVERAGE RESIDENCE

SOFT WHISPER (5')

RUSTLING LEAVES

THRESHOLD OF HEARING

THRESHOLD OF PAIN

ROCK MUSIC BAND

PILED RIVER (50')

AMBULANCE SIREN (100')

BOILER ROOM
PRINTING DEPT.

PRINTING PRESS PLANT

GARBAGE DISPOSAL IN HOME (3')
INSIDE SPORTS CAR, 50 MPH

DATA PROCESSING CENTER
DEPARTMENT STORE

PRIVATE BUSINESS OFFICE
LIGHT TRAFFIC (100')

TYPICAL MINIMUM NIGHTTIME
LEVELS--RESIDENTIAL AREAS

RECORDING STUDIO

MOSQUITO (3')

(100') = DISTANCE IN FEET
BETWEEN SOURCE
AND LISTENER

FIGURE A-1: TYPICAL SOUND LEVELS MEASURED IN THE ENVIRONMENT AND INDUSTRY

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